

H.R.I.O.


HORTICULTURAL RESEARCH INSTITUTE OF ONTARIO

Research Report #38

MUCK VEGETABLE CULTIVAR TRIALS and RESEARCH REPORTS

1988

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 Ministry of
Agriculture
and Food
ONTARIO

Muck Research Station
Kettleby, Ontario

RESEARCH AND CULTIVAR TRIAL REPORT FOR 1988

MUCK RESEARCH STATION, HOLLAND MARSH,

R.R.# 1 KETTLEBY, ONTARIO, LOG 1JO

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Introduction and Acknowledgements

Horticultural research and services programs for the fruit and vegetable industry of Ontario are the responsibility of the Horticultural Research Institute of Ontario, Ontario Ministry of Agriculture and Food. First established in 1906, this institute carries on its research efforts in four units, the Vineland Station; the Horticultural Products Laboratory, also situated at Vineland Station; the Horticultural Experiment Station at Simcoe and the Muck Research Station in the Holland Marsh.

The Muck Research Station, established in 1948, is responsible for conducting and coordinating all research projects directed towards solving problems in the production of vegetables grown in organic soils. The Ontario Muck Crops Research and Services Subcommittee (OMCRSC) representing researchers, industry, growers and crop advisors, makes recommendations for research on an annual basis. A total of 15 research and service priorities have been identified by this Committee in its annual meeting held on November 22, 1988. The following 6 were selected as meriting special support.

Recommendation # 1: Continue efforts to obtain registration and classification of herbicides for control of weeds in onions with particular emphasis on pre-emerged weed control and control of members of the spurge family.

Recommendation # 2: Expand nematode diagnostic services available to muck growers and initiate studies necessary for registration of oxamyl (Vydate) for control of nematodes attacking muck vegetables.

Recommendation # 3: Continue study of control of white rot in onions.

Recommendation # 4: Continue support of studies to support minor use registration of pesticides for the protection of muck crops.

Recommendation # 5: Continue support of integrated management of muck vegetable pests including carrot rust fly, carrot weevil, onion maggot, onion thrips, aster leafhopper, etc.,

Recommendation # 6: Initiate study of biology and control of Fusarium yellows in celery.

In 1988, Muck Research Station staff conducted and/or cooperated on research projects with researchers of the Departments of Environmental Biology and Horticultural Science at the University of Guelph; researchers from Agriculture Canada research stations at London and Vineland Station; the Ontario Pesticide Residue Testing Laboratory; researchers of the Horticultural Products Laboratory (H.R.I.O.) at Vineland Station, research departments of the Crop Protection Chemical Industry and Growers.

We acknowledge the cooperation and interest in muck crops research by the institutions and individuals mentioned above. Their efforts are greatly appreciated.

Below is a list of projects related to muck crops carried out in 1988. Details on these projects may be obtained from the researcher(s) listed with each project. Abstracts of projects and cultivar evaluation trials conducted by Muck Research Station staff are published in this report.

1. Breeding and Cultivar Testing

Onion cultivar trials on organic soil - 1987 - (Burbidge, H. and Valk, M).

Screening trials for susceptibility to cavity spot, horizontal lesions, rusty root and foliar diseases in carrot cultivars. (Burbidge, H. and Knibbe, E.N.)

Lettuce cultivar trials (Burbidge, H. and Knibbe, E.N.)

Earliness of celery cultivars - 1988 (Burbidge, H. and Knibbe, E.N.)

Radicchio cultivar trial - 1988 (Knibbe, E.N. and Burbidge, H.)

Radish cultivar trial - 1988 (Knibbe, E.N. and Burbidge, H.)

Transplanted Spanish onion cultivar trial on organic soil - 1988 (Knibbe, E.N. and Burbidge, H.)

Fusarium basal rot resistance in onion cultivars (Valk, M. and Burbidge, H.)

Ontario regional potato cultivar trial on organic soil (Burbidge, H. and Coffin R.H.)

2. Crop Protection

Biology of aster leafhopper and aster yellows complex in the Holland Marsh. (Chaput, J.R. and Sears, M.K.)

Pesticides for onion maggot control - precision seeding (Ritcey, G., McEwen F.L. and McIver, S).

Pest management in carrots and related crops. (Stevenson, A.B.)

Botcast evaluation (Schooley, K. and McDonald, M.R.)

Onion maggot control (Schooley, K. and McDonald, M.R.)

Evaluation of Safer sticky board traps for monitoring of the onion maggot. (Schooley, K. and McDonald, M.R.)

Evaluation of Phero Tech card traps for monitoring of the onion maggot. (Schooley, K. and McDonald, M.R.)

Evaluation of Phero Tech card traps for monitoring of the tarnished plant bug (Schooley, K. and McDonald, M.R.)

Pythium stunt control in lettuce - 1988 (Knibbe, E.N. and Burbidge, H.)

Effect of metalaxyl on carrot cavity spot using low and high tolerance cultivars (Knibbe, E.N. and Burbidge, H.)

Aster yellows control in lettuce grown on organic soil - 1988 (Knibbe, E.N., Valk, M. and Stevenson, A.B.)

Control of cavity spot in carrots (McDonald, M.R.)

Biology and control of diseases of parsnips and celery (Cerkauskas, R).

3. Herbicides

Pre-emergence weed control in onions - 1988 (Knibbe, E.N. and Burbidge, H.)

Weed control in onions without allidochlor - 1988 (Knibbe, E.N., Valk, M. and Burbidge, H.)

Onion - I: pre-emergence herbicides (Souza Machado, V., Ali, A., Gomes, M., Valk, M. and Knibbe, E.N.)

Onion - II: Post-emergence herbicides (Souza Machado, V., Ali, A., Gomes, M., Valk, M. and Knibbe, E.N.)

Onion - III: Barley wind abatement in onions (Souza Machado, V., Ali, A., Gomes, M., Valk, M., and Knibbe, E.N.)

4. Crop Management

Transplant modules for lettuce. (Knibbe, E.N., and Burbidge, H.)

Extending the growing period of late fall celery with row cover 1988. (Knibbe, E.N. and Burbidge, H.)

Transplant modules for celery. (Knibbe, E.N. and Burbidge, H.)

Cereal crops for wind abatement in carrots - 1988. (Knibbe, E.N. and Burbidge, H.)

5. Post Harvest Management

Controlled atmosphere (CA) storage of celery. (Lougheed, E.C. Perkin, S., Valk, M. and Knibbe, E.N.)

Storage diseases in carrots and parsnips. (Reyes, A.A.)

Storage of celery. (Smith R.)

6. Environmental Quality

Pesticide residues in carrots as a result of foliar treatment. (Ritcey, G., Frank, R., Ripley, B. and Braun, H.)

Insecticide residues in lettuce. (Ritcey, G., Frank, R., Ripley, B. and Braun, H.)

Fungicide residues in lettuce and soil (Ritcey, G., Frank, R., Ripley, B. and Braun, H.)

Residues in parsnips (Ritcey, G., Frank, R., Ripley, B. and Braun, H.)

In the Research sector, personnel resources devoted to Ontario Muck Crops in 1988 total 11.15 person years (PY's)
A breakdown by agency follows below:

	PY's	<u>Professional</u>	<u>Technical</u>	<u>Total</u>
<u>Agriculture Canada</u>				
London		0.38	0.75	1.13
Vineland		2.30	2.40	4.70
<u>University of Guelph</u>				
Environmental Biology		0.35	0.67	1.02
Horticultural Science		0.15	0.15	0.30
<u>O.M.A.F.</u>				
Muck Research Station		0.50	2.00	2.50
Horticultural Products Lab.		0.60	0.60	1.20
Agric. Lab. Services		0.15	-	0.15
<u>Industry</u>				
Hoechst		0.05	-	0.05
May & Baker		<u>0.10</u>	<u>-</u>	<u>0.10</u>
Total		4.58	6.57	11.15

In the Services Sector, the Muck Research Station provides advice on the Production and Marketing as well as Integrated Pest Management of muck crops.

Person years (PY's) in services include: 0.5 (Muck Research Station); 1.3 (Plant Industry Branch -Pest Management); 5 (Inspection Branch); and 0.1 (Agriculture Canada) for a total of 6.90 PY's.

Total person years of more than 18 devoted to muck crops appear to be adequate for the approximately 200 growers producing these crops in Ontario. However, the professional PY's devoted to research has been declining from a high of 8.55 in 1979 to an all time low of 4.58 in 1988.

During the annual meeting of OMCRCSC, growers expressed their concern about the apparent lack of support for muck crops research. A portion from that meeting's annual report follows here: "Although a quick glance suggests muck crops are well served with more than 18 PY's allocated, close inspection of the data shows growers have sound reasons for the concerns raised at the annual meeting. Just over 25% of the total PY commitment represents research PY. The engine that drives and directs research support for this very important segment of the Ontario horticulture industry is winding down. Only a few years ago, at least 7 scientists at the University of Guelph devoted major portions of their research efforts to production and protection of muck crops. Now there are none! Over the years Agriculture Canada has devoted considerable PY's to research in support of muck crops. That total has, however, declined in recent years as programs changed and will undoubtedly drop even more as London has been directed to drop further research on integrated management of vegetable pests.

The following table shows that while muck crop production has, in the past 3 years, shown a modest 6.8% increase in planted area, the value of crops harvested from those hectares has increased over 43% at the farm gate.

The prime reason for the increase is the recovery of onion prices from the disastrous fire sale levels of 1985. The 5 major muck crop vegetables represent only 8.2% of the total area planted to field vegetables in Ontario. The value of muck vegetables harvested in 1987 exceeded \$50 million, more than 15% of the total value of Ontario field vegetable production. Muck vegetables, with an average gross value of more than \$8500/ha. are high value crops".

Muck Crop Statistics* (Ontario)

Crop	Farm Gate Value (\$000)			Planted Area (ha)		
	1985	1986	1987	1985	1986	1987
Onions (all types)	13,689	24,645	25,137	2,534	2,462	2,456
Carrots (all types)	13,166	17,558	14,559	2,148	2,379	2,467
Lettuce	4,571	6,153	7,200	485	656	680
Celery (fresh & Proc.)	3,684	3,582	3,630	262	263	265
Parsnips	687	642	670	105	98	97
Total	35,797	52,580	51,196	5,584	5,858	5,965
Total Prov. Field Vegetables			335,410			72,439
% Prov. Total			15.3			8.2

* Publication 20 - Agricultural Statistics for Ontario

As a final note to this introduction to the Muck Research Station report, I would like to take this opportunity to sincerely thank the staff: Patricia Flinn, Holly Burbidge, Patricia Morton and last but not least, Edo Knibbe. Their constant devotion in the pursuit of excellence in their respective responsibilities has made my job as station manager a relatively easy one. A special thanks goes to Edo Knibbe who will be retiring early in 1989. Edo has carried the full load of research responsibilities with the help of temporary staff for at least 10 years until Holly Burbidge joined the permanent staff in 1985. We wish you many healthful and enjoyable years of retirement Edo, and I know that I speak for the whole muck crops industry when I say again: "Many thanks for a job well done!"

Finally, it is with mixed emotions that I announce my departure from the research and extension scene on March 31, 1989. I have thoroughly enjoyed the more than 19 years of work with the muck crops producers in Ontario. I'll miss the day to day contact with growers, researchers, crop advisors and others in the industry. I am planning to carry on with some other activity, consulting or otherwise in order to keep myself busy, and that's why I'll say "good bye" for now but I am sure we will soon meet again.

Sincerely,

Matthew Valk
Matthew Valk, P.Ag.

SEED SOURCES - 1988

We wish to express our sincere thanks to all those who provided us with seed for trials.

A&C Abbott & Cobb Inc., Box 307, Feasterville, Pennsylvania,
U.S.A. 19047.

A.Ch. Alf. Christianson Seed Co., Box 98, Mount Vernon,
Washington, U.S.A. 98273.

Agw Agway Inc., Seed Division, Box 4933, Syracuse, New York,
U.S.A. 13221.

Aris Aristogenes Inc., Box 311, Parma, Idaho, U.S.A. 83660.

Asg Asgrow Seed Co., Box 610, Bradford, Ontario, Canada
L3Z 2B2.

Asm Asmer Seeds Ltd., Ash St., St. Leicester, England
LE5 ODD.

Bak Bakker Bros., Box 1964, TwinFalls, Idaho, U.S.A. 83301.

BEJO Beemsterboer & Jacob Jong Seed Co. Ltd., Box 9
1722ZG Noordscharwoude, Holland.

Bur W. Atlee Burpee Seed Co., 300 Park Ave., Warminster,
Pennsylvania, U.S.A. 18974.

Cro Crookham Company, Box 520, Caldwell, Idaho, U.S.A. 83605.

CS Campbell Soup Co., Box 280, Chatham, Ontario, Canada
N7M 5K4.

E.J. Erie James Ltd., Box 457, Leamington, Ontario, Canada
N8H 3W5.

FM Ferry-Morse Seed Co., Box 431, Orchard Park,
New York, U.S.A. 14127.

HM Harris Moran Seeds of Canada, R.R. # 1 Kettleby, Ontario,
Canada LOG 1JO.

JHK J.H. Klitgord, Box 97, Mayville, New York, U.S.A. 14757.

Jung J.W. Jung Seed Co., Randolph, Wisconsin, U.S.A. 53956.

Kan Robert Kane Seed Service, 3355 High St., Randolph,
Wisconsin, U.S.A. 53916.

Kini Kini Po-Po Creations, 12 Puainakas St., Hilo, Hawaii,
U.S.A. 96720.

.../ continued

Kru Krummrey & Sons Inc., Box 158, Stockbridge, Michigan,
U.S.A. 49285.

MSU Michigan State University, Dept. of Horticulture,
East Lansing, Michigan, U.S.A. 48824.

NK Northrup King & Co., Box 1827, Gilroy, California,
U.S.A. 95021.

NUN Nunheim's Zaden B.V., Box 4005, 6080 AA, Haelen, Holland.

NZ Nickerson-Zwaan B.V., Box 19 2900AA, Barendrecht, Holland.

OE J.E. Ohlsen Enke, Box 15, Aalokke Alle 5-7, DK-5100,
ODENSE C, Denmark.

PES Peter-Edward Seed Co., 302 South Center St., Eustris,
Florida, U.S.A. 32726.

Canadian Distributer - J.C. Cannors Seed Co., R.R. # 1
Kettleby, Ontario, Canada LOL 1WO.

PETO Petoseed Co., Box 4206, Saticoy, California,
U.S.A. 93004.

RS Royal Sluis Inc., 1293 Harkins Rd., Salinas, California,
U.S.A. 93901.

Sak Sakata Seed America Inc., 18095 Serene Dr., Morgan Hill,
California, U.S.A. 95037.

Sham Shamrock Seed Co., Box 4443, Salinas, California,
U.S.A. 93912.

Sieg Siegers Seed Co., 7245 Imlay City Rd., Imlay City,
Michigan, U.S.A. 48444.

Sto Stokes Seeds Ltd., 39 James St., Box 10, St. Catharines,
Ontario, Canada L2R 6R6.

Sun Sun Seeds, 8850 59th Avenue N.E. Brooks, Oregon, U.S.A. 97305.

Swy Seedway Inc., Hall, New York, U.S.A 14463.

Tak American Takii Inc., 301 Natividad Road, Salinas, California,
U.S.A. 93906.

Toz A.L. Tozer Ltd., Cobham. Surrey, England KT113EH.

Twilley O.S. Twilley Seeds Co., Box 65, Trevoise, Pennsylvania,
U.S.A. 19047 .

UF University of Florida, Drawer 'A', Belle Glade,
Florida, U.S.A. 33430.

VDH Vanderhave, Box 1, 4410AA, Rilland, Holland.

Staff - 1987-88

MUCK RESEARCH STATION - H.R.I.O.

Matthew Valk, P.Ag.,	Officer in Charge Research & Advisory Services
Edo Knibbe, Dip. Agr.	Technician - Production and Research
Holly Burbidge, Dip. Hort.	Technician - Production and Research
Patricia Morton, B.Sc.	Agricultural Worker
Margaret Cousins	Experience '88 Student
Patricia Flinn	Office Administration Group

PEST MANAGEMENT PROGRAM - Plant Industry Branch

Mary Ruth McDonald, M.Sc.	Pest Management Specialist
Kevin Schooley	Pest Management Specialist
James Bennett	Scout
Elizabeth Eves	Scout
Wendy Jess	Scout
Robert Kell	Scout
Carol Maier	Scout
Maria Padoin	Scout
Micheal Reidy	Scout
Carla Reynolds	Scout
Bernt Solymer	Scout
Mary Jane Trim	Record Keeper
Dagmar Woll	Scout

COOPERATING RESEARCH STAFF

Ray Cerkauskus	Agriculture Canada, Vineland Station
Jim R. Chaput	Environmental Biology, University of Guelph
E.C. "Sam" Lougheed	Horticultural Science, University of Guelph
Andy A. Reyes	Agriculture Canada, Vineland Station
Gwen Ritcey	Environmental Biology, University of Guelph
Richard Smith	Horticultural Products Lab., Vineland Station
Vince Souza Machado	Horticultural Science, University of Guelph
A.B. "Steve" Stevenson	Agriculture Canada, Vineland Station

SUNSHINE HOURS

Month	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	LTA
January		75	85	58	69	88	108	82	53	68	52	71	67	93	75
February		88	105	123	132	110	81	102	102	66	60	85	145	94	100
March		114	177	141	126	128	102	130	115	135	141	124	174	151	135
April	185	221	206	191	127	155	158	219	117	152	171	162	194	137	170
May	256	197	341	230	208	233	221	199	186	164	235	222	240	236	224
June	272	261	282	281	280	192	245	170	296	335	240	258	253	304	238
July	292	250	309	303	263	246	265	303	295	268	271	252	295	280	277
August	227	268	255	253	189	206	201	225	226	218	207	217	256	243	228
September	160	192	104	179	204	161	119	138	195	168	181	112	145	185	160
October	127	114	162	144	79	108	106	126	141	105	145	129	114	96	121
November	73	88	47	107	68	73	116	61	49	77	37	94	103	48	75
December	58	83	51	58	56	74	33	35	50	39	62	38	67	86	54
Total Hours		1951	2124	2068	1801	1774	1755	1790	1825	1795	1802	1764	2053	1953	1857

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
13 Years (1976-1988).

PRECIPITATION

Month	1975		1976		1977		1978		1979		1980		1981	
	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm
January	24	31	14	43	0	37	30	44	9	57	27	15	0	33
February	29	55	24	17	11	4	0	12	9	12	4	16	37	21
March	23	28	73	16	42	16	32	8	44	14	44	24	24	13
April	21	30	72	10	20	0	74	5	67	10	110	0	36	0
May	77	0	82	5	50	0	66	0	82	0	23	0	80	0
June	55	0	66	0	67	0	53	0	47	0	88	0	71	0
July	67	0	185	0	118	0	16	0	49	0	129	0	88	0
August	74	0	53	0	155	0	102	0	100	0	48	0	84	0
September	69	0	102	0	114	0	123	0	62	0	84	0	89	0
October	38	0	79	0	86	0	53	0	116	2	71	0	75	17
November	44	0	14	10	73	10	41	7	85	2	20	9	67	6
December	25	41	13	34	11	15	21	32	57	19	42	35	5	43
Annual	546	185	777	135	747	82	611	108	727	116	690	99	656	133
Total Precip.	731		912		829		719		843		789		789	

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988).

PRECIPITATION

Month	1982		1983		1984		1985		1986		1987		1988		LTA	
	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm
January	5	54	29	7	0	56	16	29	0	35	0	37	18	5	12	35
February	0	35	28	6	24	53	63	37	16	33	6	5	3	46	18	25
March	30	31	34	12	33	18	47	3	34	19	37	16	21	1	37	16
April	22	11	75	4	46	0	42	8	37	3	48	3	57	0	52	6
May	42	0	88	0	104	0	77	0	88	0	60	0	43	0	69	0
June	141	0	29	0	61	0	43	0	120	0	112	0	38	0	71	0
July	80	0	65	0	36	0	72	0	95	0	189	0	48	0	88	0
August	71	0	90	0	81	0	158	0	166	0	81	0	91	0	97	0
September	73	0	46	0	98	0	59	0	209	0	69	0	84	0	92	0
October	47	0	75	0	39	0	73	0	47	0	66	0	79	2	67	2
November	101	7	50	24	64	0	75	28	14	17	41	43	69	0	54	12
December	58	22	11	41	22	19	0	17	25	35	23	11	24	13	24	27
Annual	670	160	620	94	608	146	725	122	851	142	732	115	575	67	681	123
Total Precip.	830		714		754		847		993		847		642		804	

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988).

MEAN TEMPERATURE (°C)

Month	1975		1976		1977		1978		1979		1980		1981	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	- 0.2	- 8.3	- 5.4	-15.8	- 9.5	-18.0	6.4	-14.6	- 4.8	-10.9	- 2.1	- 9.2	- 7.0	-17.4
February	- 1.5	- 8.3	1.0	- 6.9	- 3.1	- 9.4	6.2	-17.5	- 6.3	-16.0	- 4.6	-12.4	0.9	- 6.6
March	0.9	- 6.3	4.3	- 3.8	6.6	- 2.4	0.2	-10.9	- 6.4	2.5	1.9	- 6.3	3.3	- 5.1
April	6.1	- 2.4	12.9	2.3	13.4	1.7	8.3	- 1.0	9.9	0.9	11.3	2.0	11.6	2.1
May	22.1	8.9	16.0	5.6	21.6	5.8	18.5	6.9	17.9	7.2	19.9	6.9	17.0	4.4
June	24.3	12.2	25.7	12.5	22.2	8.9	23.3	10.2	23.7	11.1	20.3	8.7	23.7	11.5
July	27.6	13.2	24.2	13.6	26.0	14.5	27.0	13.2	27.0	16.0	25.8	13.8	26.0	14.1
August	25.3	12.4	24.6	11.9	23.9	12.0	26.4	12.8	24.1	12.7	26.1	14.7	24.5	13.0
September	18.1	7.3	19.7	8.0	18.4	10.9	19.7	8.9	21.6	8.5	19.5	8.6	18.4	9.8
October	14.9	4.6	10.0	1.5	12.2	2.7	12.6	3.6	12.2	5.1	10.3	3.1	10.6	1.7
November	10.5	1.7	3.2	- 4.2	6.6	0.4	6.3	- 1.9	7.7	1.2	4.4	- 1.8	6.8	- 1.5
December	1.7	-10.3	- 4.2	-13.6	- 2.3	- 9.1	0.2	- 6.6	- 1.3	- 4.8	- 3.3	-12.3	- 1.0	- 7.0
Mean	12.5	2.1	11.0	0.9	11.4	1.5	12.9	0.3	10.5	2.8	10.8	1.3	11.2	1.6

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988).

MEAN TEMPERATURE (°C)

Month	1982		1983		1984		1985		1986		1987		1988		LTA	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	- 6.2	-15.8	- 2.0	- 7.9	- 6.4	-14.7	- 5.7	-13.3	- 3.2	-10.6	- 2.1	- 8.8	- 1.7	-10.5	- 3.6	-12.6
February	- 3.9	-12.6	- 0.3	- 7.4	1.6	- 5.9	- 3.1	-10.8	- 4.1	-11.7	- 1.8	-12.7	- 3.0	-11.9	- 1.6	-10.7
March	- 1.9	- 6.6	3.9	- 4.1	- 0.8	-10.4	3.9	- 4.7	5.1	- 4.1	5.8	- 4.2	- 3.4	- 6.1	2.2	- 5.7
April	9.9	- 1.1	9.7	0.3	12.5	1.5	13.2	2.4	13.3	1.7	14.4	2.8	10.5	0.8	11.2	1.0
May	21.1	8.5	15.3	5.0	15.8	4.4	19.2	6.4	20.3	8.4	20.6	7.2	20.7	6.9	19.0	6.6
June	20.6	10.8	25.2	10.0	25.8	11.7	21.1	9.1	22.5	9.8	25.1	12.0	24.3	9.5	23.4	10.6
July	26.8	14.4	28.6	14.7	26.7	13.5	25.5	12.9	25.7	14.8	27.6	15.7	29.5	14.6	26.7	14.2
August	23.0	11.4	26.0	14.3	27.6	15.2	23.8	12.1	23.3	11.4	24.5	13.1	26.7	14.3	25.0	13.0
September	20.1	9.1	22.5	9.2	18.8	7.9	21.9	10.1	19.1	9.3	20.4	10.0	20.7	8.8	19.9	9.0
October	15.2	3.6	13.7	3.5	15.6	5.5	14.1	4.4	13.1	4.3	11.5	2.0	10.5	2.1	12.6	3.4
November	6.9	0.4	5.1	- 1.7	6.4	- 1.4	4.9	- 0.4	4.5	-2.4	6.7	-1.4	7.2	0.9	6.2	- 0.6
December	3.3	- 3.6	- 4.0	- 9.8	3.6	- 3.7	- 2.5	- 9.0	0.4	-4.5	-1.4	-3.8	- 0.3	- 7.8	- 0.6	- 6.9
Mean	11.3	1.5	12.0	2.2	12.3	2.0	11.4	1.6	11.7	2.2	12.8	2.7	11.8	1.8	11.7	1.8

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988).

EXTREME TEMPERATURES (°C)

Month	1975		1976		1977		1978		1979		1980		1981	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L
January	10	-26	6	-35	- 2	-36	8	-25	3.0	-31.5	10.0	-22.0	6.5	-33.5
February	8	-19	9	-26	6	-25	1	-31	6.5	-33.0	3.5	-26.0	10.0	-26.0
March	10	-21	17	-14	23	-14	8	-26	17.0	-16.5	13.0	-27.5	19.0	-17.5
April	18	-10	28	- 7	25	-11	17	- 7	23.0	- 8.0	19.5	- 5.5	21.0	- 6.0
May	30	1	25	1	32	- 2	31	- 4	30.0	- 1.0	31.0	0	27.0	- 3.5
June	32	4	32	3	30	- 2	33	2	31.0	2.5	31.5	- 0.5	34.0	- 1.0
July	34	6	32	6	34	6	33	6	32.0	5.0	29.5	5.0	32.0	6.0
August	36	4	31	2	31	4	33	6	31.5	3.0	30.5	8.0	29.5	4.0
September	26	- 1	29	1	29	4	29	- 2	30.0	- 3.0	26.0	- 1.0	27.0	- 2.5
October	22	- 9	22	- 7	18	- 3	22	- 6	24.5	- 3.0	24.0	- 5.5	17.0	- 5.0
November	19	- 6	13	-13	19	-22	20	-11	14.5	- 8.5	11.5	- 8.0	17.0	-12.0
December	13	-22	3	-23	11	-30	8	-26	9.0	-19.0	8.0	-31.5	5.0	-19.0
Annual	36	-26	32	-35	34	-36	33	-31	32.0	-33.0	31.5	-31.5	34.0	-33.5

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988).

EXTREME TEMPERATURES (°C)

Month	1982		1983		1984		1985		1986		1987		1988		LT	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L
January	4.5	-30.5	4.5	-20.0	1.0	-33.0	-1.0	-29.5	7.0	-26.0	4.5	-25.0	12.0	-28.0	12.0	-36.0
February	5.0	-28.0	10.0	-23.0	14.5	-28.0	8.5	-28.5	2.0	-23.0	3.0	-26.5	6.5	-22.0	14.5	-33.0
March	17.0	-25.0	14.5	-20.5	9.5	-29.0	16.5	-19.0	24.0	-24.0	17.0	-16.0	15.0	-18.0	24.0	-29.0
April	22.0	-14.0	24.0	-6.0	27.0	-5.0	29.5	-8.0	25.0	-5.5	27.5	-9.0	18.5	-4.0	29.5	-14.0
May	28.0	0	23.0	-2.5	28.0	-3.0	27.0	-1.5	31.0	-3.0	32.0	-4.0	32.0	-0.5	32.0	-4.0
June	25.5	2.0	33.5	-1.0	32.5	2.5	27.0	1.5	32.0	0	32.5	30.0	35.5	0	35.5	-2.0
July	33.0	6.5	34.5	5.0	33.5	2.5	31.0	6.0	32.5	5.0	33.0	8.5	36.0	5.0	36.0	2.5
August	30.5	0.5	31.5	5.0	32.5	4.0	30.5	5.5	29.0	2.5	32.0	6.0	34.5	4.0	36.0	.5
September	30.0	-0.5	30.5	0	26.5	-2.0	30.0	1.0	26.0	-0.5	28.0	1.0	28.0	0	30.5	-3.0
October	23.0	-4.0	26.0	-7.0	21.0	-3.5	20.0	-6.0	21.5	-5.0	20.0	-5.0	25.5	-6.0	26.0	-9.0
November	18.0	-9.5	17.0	-11.5	20.0	-11.0	18.5	-7.0	15.0	-12.0	14.5	-17.0	15.5	-5.0	20.0	-22.0
December	20.0	-18.5	3.0	-22.5	16.0	-1.5	6.5	-25.5	3.0	-19.0	12.0	-18.0	10.0	-24.0	20.0	-31.5
Annual	33.0	-30.5	34.5	-23.0	33.5	-33.0	31.0	-29.5	32.5	-26.0	33.0	-26.5	36.0	-28.0	36.0	-36.0

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988).

GROWING DEGREE DAYS (5°C Base)

Month	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	LTA
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
March	0	0	0	0	23	4	18	6	14	0	7	45	26	13	11
April	25	110	112	17	67	72	86	67	44	82	129	96	129	49	78
May	306	170	265	242	234	260	180	301	165	163	243	295	276	273	241
June	382	408	304	356	370	285	377	320	377	413	303	339	407	358	330
July	464	420	457	467	473	459	467	485	521	473	439	472	516	531	475
August	411	398	380	452	415	480	429	378	480	507	401	383	427	481	430
September	215	250	274	280	301	271	274	288	328	254	333	276	307	292	282
October	145	68	70	112	129	73	48	143	131	175	139	123	62	70	106
November	74	0	53	33	40	9	19	49	23	28	31	14	30	28	31
December	0	0	1	0	0	0	0	32	0	10	0	0	3	0	3
Annual	2022	1824	1916	1959	2052	1913	1898	2069	2083	2111	2025	2043	2183	2095	1987

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO
14 Years (1975-1988)

A temperature of at least 5.5°C is considered necessary for plant growth. Accumulated temperature (degree days) above 5.5°C is a measure of plant growth during the month.

1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 LTA

ASTER YELLOWS CONTROL IN LETTUCE - 1988

Two granular systemic insecticides, Di-Syston 15 G, at 75 g product per 100 m of row and Thimet 15 G at 31 g product per 100 m of row were applied at time of seeding on June 9 in a band 4 cm to each side of the lettuce row at a depth of 3 to 4 cm. Each treatment consisted of 8 rows, 43 cm apart and 10 m long, separated from the next treatment by a strip of bare soil 1.72 m in width. The 3 replications were spaced 25 m apart to minimize the effect of interplot movement of leafhoppers.

Irrigation was used shortly after seeding to promote uniform emergence. No insecticide sprays were applied.

Treatments	Number of Aster Leafhoppers/100 Plants		Number of Aster Yellows Diseased Plants/100 Plants	
	On Aug. 4	% of Check	on Aug. 12	% of Check
Check	12.8	100	5.8	100
Di-Syston	11.2	88	3.6	62
Thimet	10.4	81	4.6	79

Results: The leafhopper population was very low in number. The disease was in a very early stage of development, indicating that the infection occurred late in the growing season.

Conclusions: Although there appears to be a reduction in the number of diseased plants compared to the check, this reduction is statistically not significant according to the Duncan's Multiple Range Test.

PYTHIUM STUNT CONTROL IN LETTUCE - 1988

A test site was chosen where in past years Pythium stunt under the right conditions, greatly affected yield. The lettuce variety Ithaca was seeded on April 22, May 16, and May 30. Apron 35 SD (metalaxyl) seed treatment was applied to the seed at 1 g/100 g of seed. Ridomil 2G (metalaxyl) was applied with the seed in the seed furrow at 50, 25, and 10 kg product/ha. At each seeding date the treatments were replicated 4 times in a randomized block design. Data of plants lost due to Pythium stunt was taken weekly for 4 consecutive weeks beginning 4-5 weeks after seeding. Pythium stunt did not develop in the May 16 seeding and did not develop uniformly in the April 22 and May 30 seedings. Residue samples were taken but the results were not available at time of publication.

Treatment	Rate		% Plants Lost Due to Pythium Stunt	
	kg/ha	kg ai/ha	Seeding Date April 22	May 30
Ridomil 2G	50	1.0	1.0	4
Ridomil 2G	25	0.5	1.0	5
Ridomil 2G	10	0.2	2.5	7
Apron 35SD	1 g/100 g seed		2.4	18
Check			7.0	19

Conclusion: Ridomil 2G at 25 kg/ha reduces Pythium stunt considerably. No metalaxyl residue has been found at this rate in previous trials.

EFFECT OF RIDOMIL 2G (METALAXYL) ON A CARROT CULTIVAR SUSCEPTIBLE TO CAVITY SPOT - 1988

The carrot cultivar Presto is very susceptible to cavity spot. Metalaxyl in the form of Ridomil 2G was used when seeding Presto as a granular furrow treatment at 0,10,25 and 50 kg product per ha. The tolerant cultivar Six Pak was used as second untreated check. Treatments were replicated three times. No foliar fungicide sprays were applied. On October 21, twenty roots per replication were harvested and residue samples were taken. Evaluation took place on November 3.

Treatments	Metalaxyl kg ai/ha	Disease Index	% Horizontal Lesions + Degree	% Roots Unmarketable
Presto not treated	-	47 a	87M	36 a
Presto + Ridomil 2 G 10 kg/ha	0.2	32 b	71L	23 ab
Presto + Ridomil 2 G 25 kg/ha	0.5	18 c	27L	9 ab
Presto + Ridomil 2 G 50 kg/ha	1.0	4 c	16VL	2 b
Six Pak not treated	-	3 c	16VL	0 b

Disease Index = $\frac{\text{disease class} \times \text{number of roots in the class} \times 100}{\text{total number of roots} \times \text{number of classes}}$.

Figures in a column followed by the same letter are not significantly different at P = 0.05. Duncan's N.M.R. Test.

Horizontal Lesions and Degree: The number indicates the % of roots with horizontal lesions and/or cavity spots. The letters indicate the degree to which the roots were affected. VL = very light - horizontal lesions were few and barely visible. L = Light - few, small lesions. M = medium - roots borderline marketable. H = heavy - many large lesions or cavity spots, roots unmarketable.

% Roots Unmarketable: Due to cavity spots only.

Results: All Ridomil treatments reduced the incidence of horizontal lesions or cavity spots on the Presto cultivar. The 50 kg/ha treatment was equal to the non-treated tolerant cultivar Six Pak.

Conclusion: The severity of cavity spot on a susceptible cultivar may be reduced to the level of a resistant cultivar by using a furrow application of Ridomil. Conversely, by using a resistant cultivar, a Ridomil application may not be necessary.

TIMING OF ERADICATION OF CEREAL CROPS FOR WIND ABATEMENT IN CARROTS - 1988

Crop losses due to wind damage have indicated the need for interseeding cereal crops to protect onions and carrots. However, cereal wind abatement crops may adversely affect the vegetable which they are supposed to protect. Therefore, oats, barley, winter wheat, and rye were broadcasted at 300 seeds/m² or 27 seeds per square foot to study the effects these cereals may have on a carrot crop.

One half of the treatments were seeded on May 30, the other half on June 6. On June 6, the carrot variety Caropak was also seeded on beds at 2 triple rows per bed with a precision seeder at 98 seeds/m (30 seeds/ft). The shaping of these beds (86 cm apart) damaged the earlier seeded and emerged cereal crops. Prometryne at 0.88 kg ai/ha (Gesagard at 1.1 kg product/ha) was applied on June 7 when the cereal crops were either covered by up by the bedshaper or had not emerged as yet. Linuron was applied on July 15 when the carrots were 8 cm high. The rate was 0.75 kg ai/ha (1.5 kg product/ha) tank mixed with Assist at 2.5 L/ha. Sethoxydim at 2.5 L/ha (Poast at 1.9 L product/ha) was applied to one half of each treatment when deemed necessary. i.e. cover crop approximately 15 cm in height. The other half of the treatments were sprayed on July 8, when the cereal crops appeared to be interfering with the growth of the carrot crop. The wind abatement value of the cereal crops was evaluated on July 27, one day before the eradication spraying started. In the two weeks from June 12 to 26, maximum temperatures over 31.5°C were recorded on 9 days. Harvest took place on Sept 30.

Table I

A seeding rate of 300 seeds/m² or approximately 27 seeds per square foot equals:

	kg/ha	lbs/a	bu/a
Oats	104	93	2.9
Barley	97	87	1.8
Winter Wheat	118	105	1.7
Rye	73	65	1.2

.../ continued

Table IIEvaluation of Wind and Burning Off Protection by Cereal Crops

Cereal Crop	Seeding Date	Plant Height (cm)		Wind Protection *		Burn-off Protection *
		June 15	June 27	June 15	June 27	June 27
Oats	June 6	5	12	1.0	4.0	3.0
	May 30	13	14	3.0	4.0	3.5
Barley	June 6	8	17	3.0	5.0 **	5.0
	May 30	15	20	5.0	5.0 **	5.0
Winter Wheat	June 6	5	12	1.0	3.0	2.0
	May 30	10	14	3.0	3.0	2.0
Rye	June 6	9	10	2.0	4.0	4.0
	May 30	10	10	2.0	4.0	2.5

* 5 = Most Desirable

** The barley is beginning to interfere with the development of the carrot crop.

Table IIITiming of Eradication of Cereal Crops and the Effect on Yield and Plant Stand of Carrots.

Cereal Crop	# Days Seeding to Spraying	Yield t/ha	Plants /m
Oats	28	78	46
	30	87	55
	32	52	35
	38	49	45
Barley	23	79	48
	24	72	44
	32	38	28
	34	35	31
Winter Wheat	28	75	46
	31	71	43
	32	63	50
	35	51	34
Rye	28	64	22
	29	66	42
	32	42	15
	33	47	39
Check - no cereal crop		81	53

Results:

1. The untreated check plots produced the highest yield and plant stand with the exception of one oats treatment. No wind damage occurred due to the sheltered location of the plots.
2. Barley supplied the best and earliest protection.
3. Barley did more damage to yield and plant stand than the other cereal, when eradication was delayed beyond 23 days after seeding.
4. Rye depressed yield and plant stand in all treatments.
5. Oats did the least damage but provided only fair wind and burning off protection.

Conclusions:

1. Sethoxydim (Poast *) should be applied no later than 21 days after seeding the wind abatement crop, or when the cereal plants are about 15 cm high.
2. Comparing these results with the earlier research, the seeding rate should be reduced to 200-225 seeds/m² (18 to 20 seeds/square foot).
3. Barley provides the best early protection.

* NOTE: Poast is not registered for use on carrots in Canada. Fusilade is not permitted for use on carrots in Ontario.

SCREENING ONION CULTIVARS FOR FUSARIUM BASAL ROT - 1987

Fourteen onion cultivars and breeding lines were seeded in a field heavily infested with Fusarium oxysporum on April 27/87 at 43 to 49 seeds/m. The seed was treated with Pro-Gro. Lorsban 15G was applied at 18 kg/ha with the seed in the furrow using a V belt seeder equipped with a 5 cm wide scatter shoe. Normal management practices were followed. On Aug. 20/87 a 6m sample of each plot was harvested and placed in an onion storage for curing and storing. On April 14, 1988 these samples were evaluated for Fusarium development.

<u>Cultivar</u>	<u>Source</u>	<u>Fusarium Rating</u>	<u>Comments</u>
Super Spice II	Sto	4.60	
Exporter II	Sto	4.53	
Bronze Reserve	FM	4.43	
XPH 3246	Asg	4.18	
XPH 3311	Asg	4.00	Only 1 rep
Super Spice	Sto	3.93	
Hustler	HM	3.93	
Bullet	FM	3.67	Only 3 reps
Gold Mine	FM	3.67	Only 3 reps
Canada Bronze	Sto	3.58	Inconsistent between reps
Class Pak	FM	3.00	
HXP 3636	HM	3.00	
Norstar	Tak	2.83	
XPH 3282	Asg	2.75	

5 = Most Desirable

Listed in Order of Fusarium Tolerance

WEED CONTROL IN ONIONS - 1988

On April 28, barley was broadcast at 250 seeds/m². Six days later, on May 4, the onion cultivar Aries was seeded at 46 seeds/m in rows 43 cm apart. The same day, one row of barley per 4 rows of onions was seeded at 50 seeds/m. A high clearance hydrostatic tractor equipped with a compressed air powered sprayer was used to spray the 5 m X 1.72 m plots (4 rows X 43 cm). The treatments were applied at a pressure of 140 k Pa (20 lbs psi) and a water volume of 400 L/ha using 8004 nozzle tips. All treatments were replicated 4 times. The barley was eradicated on May 26 using Poast (sethoxydim) + Assist at 19 L/ha and 5 L/ha respectively. On June 22, the onion and barley injury was evaluated. Handweeding was done on July 21 and August 10. Harvest took place on September 12. The major weed species were red root pigweed, oak-leaved goosefoot, common groundsel, prostrate pigweed, and purslane.

Results:

1. The loop stage application of CIPC and Bladex severely injured the barley, considerably reducing its usefulness for wind abatement.
2. Best overall results were obtained by the tank mixture of Goal, Pardner, and Manganese Sulfate i.e.: good yield, very little crop injury and the lowest weeding cost.
3. Pardner alone or tank mixed at high rates with CIPC resulted in crop injury and a reduction in yield.
4. Prostrate pigweed and purslane were not controlled by Pardner.

<u>Trade Name</u>	<u>Chemical Name</u>	<u>Conversion Factor</u>
Bladex	cyanazine	1.25
CIPC	chlorpropham	2.1
Goal	oxyfluorfen	5.2
Pardner	bromoxynil	3.6

To obtain rate/ha ai divide the rate/ha product by the conversion factor.

Example: 14 L/ha CIPC = 6.67 kg ai/ha chlorpropham.

.../continued

Treatment	Rate/ha Product	Applied at	% Onion Injury	% Barley Injury	Weeding Cost (\$/ha)	Yield t/ha
handweeded check			0	10*	3393	43
CIPC	14.0 L	Pre				
CIPC + Bladex	9.4 L + 1.4 kg	Loop	3	60	1130	48
Pardner	0.8 L	Pre				
CIPC	18 L	Loop	3	20	1035	48
Goal	0.14 L	2 lvs				
	0.62 L	3,5, & 7 lvs				
Pardner	0.8 L	Pre				
CIPC	18L	Loop	6	20	1155	35
Pardner	0.4L	2 lvs				
	1.2 L	3 lvs				
	0.6 L	5 & 7 lvs				
Pardner	0.8 L	Pre				
CIPC	18 L	Loop	10	20	725	43
Goal + Pardner	0.14 L + 0.14 L	2 lvs				
	0.28 L + 0.56 L	3,5 & 7 lvs				
Pardner	0.8 L	Pre				
CIPC	18 L	Loop	5	20	508	45
Goal, Pardner						
+ Mansul	0.14 L + 0.14 L + 2.8 kg	2 lvs				
	0.28 L + 0.56 L + 5.6 kg	3,5 & 7 lvs				
Pardner	0.8 L	Pre				
CIPC	18L	Loop	3	20	1048	50
CIPC + Goal	5.6 L + 0.14 L	2 lvs				
	5.6 L + 0.28 L	3 lvs				
	5.6 L + 0.62 L	5 & 7 lvs				
Pardner	0.8 L	Pre				
CIPC	18 L	Loop	5	20	2158	24
CIPC + Pardner	5.6 L + 0.4 L	2 lvs				
	5.6 L + 0.8 L	3,5, & 7 lvs				

* The broadcasted barley was damaged by night frost

Mansul = Managanese Sulfate

45 t/ha = 20 t/a = 800 bags/acre

1 ha = 2.5 acres

ROW COVER TO EXTEND THE GROWING PERIOD OF LATE CELERY - 1988

Celery (Florida 683) was seeded May 12, transplanted into flats July 7 and planted in the field July 21. Each plot consisted of 3 rows 5 m long, spaced 60 cm apart and the plants were spaced at 20 cm in the row. On September 22, 3 plots were covered with Agryl P17, a very light, non-woven sheet of continuous fibre of polypropylene. These plots were compared for frost damage and yield with the plots not covered. Temperatures were recorded at 25 cm above ground level in the celery canopy. Data was taken at harvest on Nov. 2. Replicated samples of the trimmed celery were placed in a storage at 1°C and a relative humidity of 95%. On January 5, 1989 after 65 days in storage these samples were evaluated for use by the processing industry.

Below freezing temperatures (°C) were recorded on the following dates:

	<u>OCTOBER</u>										
	8	9	14	19	20	21	23	26	27	30	31
Open field	-3°	-3°	-3°	-2°	-8°	-4°	-6°	-2°	-6°	-5°	-10°
Hours of frost	10	8	12	8	13	4	9	2	5	12	16
No Cover	+1°	-1°	0°	NA	NA	NA	-1°	+1°	-2°	-2°	-3°
Hours of frost	-	7	9	NA	NA	NA	3	-	3	17	17
Covered	+2°	-1°	-1°	NA	NA	NA	0°	+1°	0°	-2°	-3°
Hours of frost	-	4	12	NA	NA	NA	-	-	-	16	18

NA = Not Available

Evaluation at harvest November 2, 1988

Treatment	Total Yield/plot	Marketable yield/plot	% Trim loss	length (cm)	skin tightness*	pithiness*
no cover	26.3 kg	14.9 kg	43	62.5	2.57	3.50
covered	28.2 kg	16.0 kg	43	66.0	3.15	3.95
difference in %	+ 7	+7.3		+5.6	+22.6	+12.9

* 5 = Most Desirable

ROW COVER TO EXTEND THE GROWING PERIOD OF LATE CELERY - 1988 - continued

Evaluation after 65 days in storage Jan 5, 1989

<u>Treatment</u>	<u>Weight in kg</u>	<u>Marketable weight (kg)</u>	<u>% loss</u>	<u>Colour*</u>	<u>Qaulity*</u>	<u>Freshness*</u>
no cover	14.9	9.6	39.4	3.2	2.9	3.3
covered	16.0	10.0	37.4	3.3	3.4	3.9

* 5 = Most Desirable

Results

1. At temperatures above 5°C there were no significant differences between the covered and not covered celery.
2. At temperatures below 5°C, the temperatures were 1° to 2°C higher in the covered plots and the length of time of the frost period was less.
3. The very severe frost, -10 °C, on Oct. 31 did much damage to the not covered as well as the covered celery.

Conclusions: Covering the celery may extend the growing and marketing season by up to one month.

CARROT CULTIVAR TRIALS - 1988 - PACKAGING TYPES

MANAGEMENT PROCEDURES

Fertilizer: 250 kg/ha 20-8-20 + 10 kg/ha Borax was worked in deeply with a rotovator.

Seeded: May 25, 26, & 27 at 82 seeds/m in rows 50 cm apart using a V Belt seeders equipped with a 5 cm scatter shoe. The Main Trial was replicated three times.

Weed Control: Pre-emergence - 1.1 kg/ha Gesagard
Post-emergence - 1.1 kg/ha Lorox + 2 L/ha Assist

Minor Elements: 2 foliar sprays of 1 kg/ha Solubor
1 foliar spray of 1.8 kg/ha Calcium Nitrate
1 foliar spray of 3 kg/ha Epsom Salts

Harvest: The Adaptation Trial was harvested October 5 & 6, the Main Trial on October 14. At that time, data was taken of the presence of rusty root and leaf blights.

Storage: The samples were placed in a temperature and relative humidity controlled storage (0°C).

EVALUATION

The Main Trial was evaluated after 7 weeks in storage. The Adaptation Trial was evaluated after 9 weeks in storage.

Marketable Yield t/ha + b/a: The marketable yield includes the packaging size, 19 to 44 mm (3/4" to 1 3/4") as well as the oversize > 44 mm (1 3/4" +).

Score: The average of the seven marks from shape to core size.

% Horizontal Lesions + Degree: The number indicates the % of roots with horizontal lesions and/or cavity spots. The letters indicate the degree to which the roots were affected. VL = very light - horizontal lesion were few and barely visible. L = light - few, small lesions. M = medium - roots borderline unmarketable. H = heavy - many large lesions or cavity spots, roots unmarketable. i.e. 50H - 50% of the roots were heavily infested with lesions or cavity spots.

Blight: Regular fungicide applications were discontinued on September 1 to allow the cultivars to be evaluated for tolerance to leaf blights at harvest.

CARROT CULTIVAR MAIN TRIAL - 1988 - PACKAGING TYPES

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Root		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a			Length (cm)	Width (cm)	Shape	Size			Internal	External				
Canada Super X	PES	89	1582	8	91	22	3.2	4.0	3.8	3.9	4.4	4.0	4.1	4.1	4.05	40L	1.3
Orlando Gold	Sto	84	1489	9	91	22	3.0	4.0	4.0	4.0	4.4	3.9	4.2	3.9	4.06	43L	4.3
Canuck	Sto	91	1619	18	86	22	3.5	4.1	3.9	4.0	3.8	3.6	3.9	3.9	3.88	32L	4.3
Golden State	A.Ch.	81	1441	10	88	22	2.9	3.9	3.6	3.7	4.6	4.2	4.3	3.9	4.02	77L	4.7
Six Pak	HM	80	1431	16	88	22	3.5	3.9	3.6	3.8	4.3	3.6	3.9	3.8	3.84	23VL	5.0
Gold Pride	HM	84	1501	16	88	22	3.3	4.0	3.8	3.8	4.6	3.8	4.2	3.7	3.98	43L	5.0
Scout	PETO	61	1083	3	76	21	2.8	4.1	3.7	3.7	4.2	3.9	4.0	3.8	3.91	73L	5.0
24 Karat	FM	83	1486	21	91	21	3.3	3.9	3.7	3.9	3.8	3.6	3.8	3.6	3.74	35L	4.0
Caropak	Asg	91	1624	15	88	20	3.2	4.0	3.9	3.8	4.0	3.7	4.0	3.7	3.87	38L	5.0
Orange Sherbet	Sto	95	1690	16	91	20	3.2	3.8	3.8	3.9	3.9	3.5	3.9	3.9	3.82	27L	4.3
Vitasweet 711	A&C	71	1258	18	91	20	3.3	4.1	4.1	4.0	4.7	4.2	4.4	3.7	4.18	48L	4.3
Six Pence	HM	79	1400	14	85	20	3.1	3.8	3.7	3.4	4.3	3.6	4.0	3.7	3.78	68M	5.0
Six Pak II	HM	86	1528	7	89	20	3.1	3.9	3.7	3.7	4.2	3.7	4.0	3.8	3.85	40VL	5.0
Dagger 78	Sun	77	1376	9	86	20	3.0	3.9	3.7	3.7	4.3	4.0	4.2	3.9	3.96	50VL	4.0
Spartan Prem.	JHK	117	2091	21	94	20	3.3	3.9	3.7	3.9	3.7	3.8	3.9	3.9	3.82	57VL	3.7
Cello King	NK	93	1648	13	88	19	3.1	4.1	4.0	3.9	4.4	4.0	4.1	4.0	4.07	75L	4.3
Mokum	BEJO	106	1878	14	90	19	3.3	3.9	3.8	3.7	3.1	3.8	3.8	4.3	3.77	57L	5.0
Prospector	PETO	93	1655	7	85	19	3.1	3.9	4.0	3.7	4.1	3.9	4.1	3.9	3.94	67L	5.0
Centennial	Asg	103	1842	26	90	19	3.4	3.7	3.5	3.6	3.9	3.6	3.9	4.1	3.75	37L	4.0
A Plus	Cro	105	1867	24	90	18	3.5	3.9	3.4	3.7	4.4	3.9	4.0	3.9	3.89	53L	4.3
Ingot	Sto	91	1617	22	86	18	3.4	3.7	3.7	3.6	4.0	3.9	4.1	4.1	3.86	43L	3.0
Sp. Nant. 616	Sto	104	1848	26	88	18	3.7	3.8	3.2	3.1	3.1	3.3	3.8	3.3	3.38	87M	4.3
PY 60	PES	101	1806	36	83	17	3.5	3.5	3.7	3.3	3.7	3.7	4.0	3.0	3.56	83L	4.5
Nelson	BEJO	117	2082	10	93	16	3.4	4.1	4.2	3.7	3.4	4.1	4.1	3.8	3.91	47M	4.7

5 = Most Desirable

Listed in Order of Length

20 cm = 8 inches

Rusty Root: PY 60 had a few rusty coloured root hairs with no effect on root development.

The cultivars Mokum and Special Nantes 616 were found to be brittle.

See index for cultivars suitable for slicing.

CARROT CULTIVAR ADAPTATION TRIAL - 1988 - PACKAGING TYPES

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Root		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a			Length (cm)	Width (cm)	Shape	Size			Internal	External				
Amca	A&C	68	1205	14	87	17	3.5	3.7	3.7	3.3	2.7	4.0	4.0	4.0	3.63	90L	5
Goldpak 28C	A.Ch.	53	947	28	90	20	3.2	3.7	3.3	3.0	4.7	3.7	4.0	3.7	3.73	60L	4
CX 6093	A.Ch.	85	1506	11	84	21	3.3	4.3	4.0	4.0	4.7	4.0	4.0	3.7	4.10	100L	5
Brandywine	Aris	105	1867	17	93	16	3.3	4.0	4.0	3.7	3.3	3.7	3.7	3.7	3.73	40VL	4
Vodka	Aris	49	878	2	42	16	3.4	4.0	4.3	1.7	3.0	2.7	3.7	4.0	3.34	90H	3
Chancellor	Asg	82	1465	9	80	19	3.1	4.0	3.3	3.7	4.3	4.0	4.0	4.0	3.90	90L	4
Paramount	Asg	100	1771	20	89	18	3.2	3.3	3.0	3.3	4.0	4.0	4.0	3.7	3.61	70L	3
XPH 3486	Asg	73	1305	6	88	22	3.0	4.3	4.0	4.0	4.3	4.3	4.7	4.3	4.27	60L	4
XPH 3487	Asg	73	1292	9	92	21	2.1	4.3	4.3	4.0	4.7	3.3	4.3	3.7	4.09	60L	5
XPH 3504	Asg	54	968	2	63	20	3.0	4.0	3.7	3.7	4.7	4.3	4.0	4.0	4.06	80VL	5
XPH 3622	Asg	75	1326	10	76	19	2.9	4.0	3.7	3.7	4.7	4.3	4.3	3.7	4.06	100L	5
XPH 3623	Asg	53	936	14	79	22	3.1	4.0	3.7	3.0	4.0	4.0	4.0	3.7	3.77	70M	5
XPH 3628	Asg	79	1401	14	85	23	3.4	4.0	4.0	4.3	4.0	4.3	4.3	3.7	4.09	80VL	5
XPH 3706	Asg	69	1228	9	86	20	3.1	3.7	4.0	3.7	4.7	3.7	4.0	3.3	3.87	80L	5
XPH 3707	Asg	101	1792	7	85	21	3.1	3.7	4.3	4.0	3.7	4.0	4.0	3.7	3.91	80L	5
XPH 3708	Asg	89	1588	27	91	21	3.1	3.3	3.7	3.3	4.0	3.7	4.0	3.7	3.67	30M	5
Liberty	Bak	102	1819	14	95	20	3.2	4.0	3.7	3.7	4.0	4.0	4.0	3.3	3.81	70L	4
Naba	Bak	67	1191	3	79	15	3.1	3.0	3.0	3.0	3.3	3.3	3.7	3.7	3.29	50L	4
Bangor	BEJO	137	2435	34	91	15	3.8	2.7	2.0	2.7	3.7	3.7	3.7	3.0	3.07	80L	4
Barnum	BEJO	100	1787	18	88	16	3.4	3.3	3.3	3.0	3.3	3.7	4.0	3.7	3.47	70L	5
Bergen	BEJO	83	1483	18	83	17	3.7	3.3	3.7	3.0	3.3	3.7	4.0	3.3	3.47	60L	5
Ferrara	BEJO	87	1554	30	78	16	3.9	3.7	2.7	2.3	3.7	4.0	4.0	3.3	3.39	80M	5
Nairobi	BEJO	61	1091	24	67	17	3.6	3.3	3.0	3.7	4.0	4.0	4.0	3.7	3.67	70L	5
Nandrin	BEJO	101	1792	20	78	19	3.9	3.7	3.3	3.0	3.3	3.7	3.7	3.3	3.43	70M	4

.../ continued

CARROT CULTIVAR ADAPTATION TRIAL - 1988 - PACKAGING TYPES - continued

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Root		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a			Length (cm)	Width (cm)	Shape	Size			Internal	External				
Nantucket	BEJO	98	1736	12	90	16	3.4	3.7	3.7	3.0	3.3	3.7	4.0	3.7	3.59	70L	5
Napoli	BEJO	104	1855	47	85	21	4.0	4.3	2.0	2.3	2.7	3.7	3.7	3.7	3.20	70M	5
Narbonne	BEJO	108	1922	20	89	17	4.0	3.3	3.3	3.3	4.0	3.7	4.0	3.7	3.61	90L	5
Narman	BEJO	95	1684	15	87	15	3.5	3.3	3.7	3.0	3.7	3.7	4.0	2.3	3.39	80VL	5
Nevada	BEJO	110	1956	23	89	20	3.5	4.0	3.7	4.0	3.7	3.3	3.7	3.7	3.73	60L	5
Toudo	BUR	80	1420	32	92	14	3.2	3.3	3.3	3.3	4.0	2.0	3.3	4.0	3.31	80M	4
SDC 1365	CS	93	1655	31	98	22	3.6	3.7	3.7	4.0	4.0	4.0	4.0	3.7	3.87	20L	4
SDC 1370	CS	84	1495	26	92	20	3.6	4.0	3.7	3.7	3.7	4.0	4.0	3.7	3.83	60L	5
SDC 1373	CS	94	1666	25	95	21	3.4	4.3	3.7	4.0	4.3	4.0	4.0	3.7	4.00	50L	5
Aristo Pak	Cro	95	1696	16	94	19	3.2	4.0	3.7	4.0	4.0	3.7	4.0	3.7	3.87	50L	5
Savory	Cro	84	1502	4	92	20	2.9	4.0	4.0	4.0	4.0	3.7	3.7	4.3	3.96	70L	5
XPH 86W133	Cro	88	1568	2	83	21	3.1	4.3	4.3	4.3	4.0	3.7	4.0	3.7	4.04	60L	5
XPH 86W438	Cro	75	1328	8	94	20	3.3	3.7	4.0	4.0	4.3	3.7	4.0	4.0	3.96	60L	5
Sierra	NK	94	1666	17	88	19	3.1	3.0	3.0	3.0	4.7	3.3	3.7	4.0	3.53	100L	5
N1Z 626	NZ	93	1661	0	87	21	2.9	4.0	4.3	4.0	4.0	3.7	4.0	4.0	4.00	20L	5
N1Z 1596	NZ	89	1581	7	89	22	2.9	3.7	3.7	3.7	4.0	3.7	4.0	3.7	3.79	60L	5
N1Z 1597	NZ	86	1536	7	80	21	3.3	4.0	4.0	3.7	3.7	3.7	3.7	3.7	3.79	20L	5
Campo	NUN	84	1497	11	83	14	3.2	3.7	3.7	3.3	3.7	3.7	3.7	3.7	3.64	80M	5
Parano	NUN	74	1323	9	88	17	2.1	4.0	4.3	4.0	3.3	3.3	3.7	4.0	3.80	90L	5
Varo	NUN	93	1650	8	83	16	3.2	3.3	3.7	3.0	3.3	3.7	4.0	4.0	3.57	50M	5
Narova	OE	94	1677	4	87	17	3.0	4.0	4.0	3.7	3.0	4.0	4.0	4.0	3.81	70L	5
Baby Round *	PES	60	1075	59	94	--	--	4.7	2.0	3.0	2.7	2.0	3.0	3.0	2.91	100M	5
Good Pak	PES	57	1011	6	62	21	3.3	3.7	3.3	3.3	4.7	2.0	3.7	3.7	3.49	80L	5
Castino	RS	97	1718	20	88	17	3.4	3.7	3.3	3.3	3.3	3.3	3.7	3.7	3.47	90M	5

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CARROT CULTIVAR ADAPTATION TRIAL - 1988 - PACKAGING TYPES - continued

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Root		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a			Length (cm)	Width (cm)	Shape	Size			Internal	External				
Rondino	RS	99	1759	16	92	20	3.3	4.0	4.0	3.3	3.0	3.3	3.7	3.7	3.57	40L	4
Nagano	Swy	77	1374	3	90	18	3.3	3.7	4.0	3.3	3.7	3.3	3.7	3.7	3.63	90L	4
Shamrock # 1	Sham	70	1242	21	71	21	3.5	3.7	3.0	2.7	3.7	3.3	3.7	3.7	3.40	40M	5
Discovery	Sieg	67	1189	7	86	22	3.1	4.3	4.0	3.7	4.7	3.7	4.0	4.0	4.06	70L	5
Harvestmore	Sieg	52	924	30	76	21	2.9	3.3	3.0	2.7	4.0	3.3	3.7	3.7	3.39	40L	5
Earlibird Nant.	Sto	80	1431	0	76	15	3.2	3.0	4.0	3.3	3.3	3.3	4.0	3.7	3.51	60M	5
King Imp.	Sto	86	1522	31	91	21	3.3	4.0	3.7	3.0	3.7	2.0	3.3	3.3	3.29	80L	5
Klondike Nant.	Sto	111	1969	12	97	20	3.5	3.7	4.0	3.7	4.0	3.7	4.0	3.7	3.83	70L	3
Spartan Fancy	Sto	59	1057	18	77	21	3.4	4.3	3.7	4.0	4.3	3.7	3.7	4.0	3.96	60L	4
Spartan Prem.	Sto	100	1775	28	84	19	3.2	4.0	3.3	4.0	3.7	3.3	4.0	4.0	3.76	50L	4
Super Nantes	Sto	78	1298	8	90	18	3.5	4.0	4.0	3.7	3.3	3.3	3.7	3.7	3.67	60L	5
Touchon Deluxe	Sto	86	1533	4	78	15	3.3	4.3	3.3	3.7	3.7	3.7	3.7	3.7	3.72	90M	5
Apache	Sun	72	1278	22	79	18	3.3	3.7	3.3	3.0	4.0	3.7	4.0	3.0	3.53	100L	5
Huron	Sun	48	846	7	59	20	3.1	4.0	3.7	4.0	4.0	3.7	4.0	3.7	3.87	90M	4
Impakt	Sun	65	1148	8	67	20	3.2	4.0	3.7	3.7	4.3	3.3	3.7	4.0	3.81	50L	5
Seminole	Sun	38	669	4	45	19	3.7	3.3	3.7	3.7	4.7	3.7	3.7	3.0	3.69	70L	5
Sunre 3211	Sun	78	1394	15	92	19	3.7	3.7	3.0	3.3	4.7	4.0	4.0	2.7	3.63	70M	5
SR 410	Sun	74	1310	6	90	20	3.2	4.3	4.0	4.0	4.3	3.7	4.0	3.3	3.94	90L	5
SR 438	Sun	78	1379	12	94	22	3.2	4.3	4.3	4.3	4.7	4.3	4.0	4.0	4.27	60L	5
Rival	Toz	102	1814	37	96	18	3.8	2.7	3.7	3.0	3.7	3.7	4.0	3.7	3.50	50L	5
Rocket	Toz	109	1937	18	94	16	3.5	3.3	4.0	3.3	3.3	3.7	3.7	3.7	3.57	70M	5
Vitasweet 500	Tw	84	1495	23	88	16	3.2	3.3	3.7	3.0	3.3	3.7	4.0	3.7	3.53	80M	4

5 = Most Desirable

20 cm = 8 inches

* 2= A round carrot, harvested much to late.

Rusty Root: Nandrin had many rust coloured root hairs and some rat tailing.

Amca, Brandywine, Vodka, XPH 3622, 3623, 3706, Barnum, Touchon Deluxe, Apache and Huron had few rust coloured root hairs with no effect on root development.

The cultivars found to be brittle were Parano, Varo, and Vitasweet 500.

Nantucket, Toudo, Narova and XPH 86W438 had weak tops.

see index for cultivars suitable for slicing.

SLICING TYPE CARROT CULTIVARS - 1988

Cultivar	Source	Marketable t/ha	% Marketable	Root Length (cm)	Eye Appeal	Resistance to Greening	Colour		Core Size	% Horizontal Lesions and Degree	Rusty Root	Blight	Slicer	Score
							Internal	External						
<u>Cultivars Grown in Processing Trials</u>														
Century 88	Aris	85	95	22	3.3	3.7	4.0	3.7	3.0	20VL	5.0	3.0	3.7	3.70
Naba	Bak	85	96	22	3.8	3.3	3.7	4.0	3.7	70M	5.0	5.0	4.0	3.71
Bangor	BEJO	159	97	22	4.0	3.0	3.9	4.0	3.0	30L	5.0	5.0	4.0	3.74
Kamaran	BEJO	98	96	21	4.4	3.7	4.2	4.0	3.7	40L	5.0	5.0	3.7	4.07
Giant 114	PES	94	97	20	3.4	3.1	3.9	3.9	2.9	45L	4.7	4.7	3.9	3.64
Laranda	Swy	124	84	23	3.9	3.3	3.7	3.7	3.7	70L	4.0	4.0	4.3	3.68
<u>Cultivars Grown in Packaging Trials</u>														
Brandywine	Aris	105	93	16	3.9	3.3	3.7	3.7	3.7	40VL	4.0	4.0	4.7	3.73
Mokum	BEJO	106	90	19	3.8	3.1	3.8	3.8	4.3	57L	5.0	5.0	4.2	3.77
Nandrin	BEJO	101	78	19	3.3	3.3	3.7	3.7	3.3	70M	3.0	4.0	4.0	3.43
Napoli	BEJO	104	85	21	2.9	2.7	3.7	3.7	3.7	70M	5.0	5.0	4.0	3.20
Narbonne	BEJO	108	89	17	3.3	4.0	3.7	4.0	3.7	90L	5.0	5.0	3.7	3.61
Nelson	BEJO	117	93	16	4.0	3.4	4.1	4.1	3.8	47M	5.0	4.7	4.2	3.91
Campo	NUN	84	83	14	3.6	3.7	3.7	3.7	3.7	80M	5.0	5.0	4.3	3.64
Narova	OE	94	87	17	3.9	3.0	4.0	4.0	4.0	70L	5.0	5.0	4.7	3.81
PY 60	PES	101	83	17	3.5	3.7	3.7	4.0	3.0	83L	4.0	4.5	3.8	3.56
Touchon Deluxe	Sto	86	78	15	3.8	3.7	3.7	3.7	3.7	90M	4.0	5.0	4.3	3.72
Rival	Toz	102	96	18	3.1	3.7	3.7	4.0	3.7	50L	5.0	5.0	3.7	3.50
Rocket	Toz	109	94	16	3.5	3.3	3.7	3.7	3.7	70M	5.0	5.0	4.0	3.57
Vitasweet 500	Twi	84	88	16	3.3	3.3	3.7	4.0	3.7	80M	5.0	4.0	4.3	3.53

5 = Most Desirable

Legend:

Eye Appeal: Average of the appearance or smoothness and uniformity of size and shape.

Slicer: A perfect cylindrically shaped root received a mark of 5.

See Carrot Trial write ups for explanation of other marks.

More information on these cultivars can be found in the Packaging and Processing Reports.

CARROT CULTIVAR STORAGE TRIAL 1987-88 - PACKAGING TYPES

<u>Cultivar</u>	<u>Source</u>	<u>% Marketable</u>	<u>% Weight Loss In Storage</u>	<u>% Decay</u>	<u>Degree * of Decay</u>
Orange Sherbet	Sto	87	7	6	2.0
Seminole	Sun	78	7	15	3.0
Prospector	PETO	77	7	16	3.0
Cello King	Sieg	77	6	17	2.3
Spartan Fancy 80	JHK	77	12	11	3.0
Special Nantes 616	Sto	77	11	12	2.0
Orlando Gold	A.Ch.	77	10	13	2.3
Canada Super X	PES	77	7	16	2.7
Golden State	Asg	75	11	14	2.0
Harvestmore	Cro	75	4	21	3.3
Discovery	Sieg	74	7	19	3.0
Six Pak	HM	74	9	17	2.3
Aristo Pak	Cro	72	9	19	3.0
Six Pak II	HM	71	9	20	2.7
Top Pak	HM	68	7	25	2.3
Sierra	NK	66	4	30	3.0
Goldmine	Sun	65	11	24	2.3
Mokum	BEJO	65	12	23	2.3
Chancellor	Asg	64	8	28	2.7
Fanci Pak	NK	60	10	30	2.7
Gold Pride (HXP 1061)	HM	60	11	29	2.3
Caropak	Asg	59	10	31	2.3
Scout	PETO	53	8	39	2.3
Average		71	8	21	2.6

* 5 = Most Desirable, no decay

Listed in order of % Marketable

Harvested October 16, 1987, placed in a cold storage where the relative humidity was kept at 95-100%. On April 5, 1988, the samples were moved to a Filacell Storage where the relative humidity was kept at 98%. The temperature was kept between 0°C and 2°C.

3 Replications

Judged: July 12, 1988.

Total storage period = 38 1/2 weeks

LONG TERM AVERAGES - CARROT CULTIVAR STORAGE TRIAL - PACKAGING TYPES

Cultivar	Source	# Years Tested	% Marketable	% Weight Loss in Storage	% Decay	Degree* of Decay
Spartan Classic 80	Sto	4	90.8	6.8	2.4	3.5
King Imperator	Sto	3	88.0	7.3	4.7	3.7
Canuck	Sto	6	87.0	8.6	4.4	4.5
Gold Pak 28	Sto	3	86.7	10.0	3.3	4.2
HiPak	HM	4	86.2	9.3	4.5	4.1
Spartan Sweet 'A'	Cro	4	86.1	7.6	6.3	3.5
Spartan North 'A'	Cro	5	85.8	9.4	4.8	3.6
Klondike Nantes	Sto	4	85.6	8.1	6.3	3.7
Lance	Sto	4	84.8	8.5	6.7	2.9
Grenadier	HM	5	84.6	8.8	6.6	3.6
Candy Pak	Cro	8	84.6	11.3	4.1	2.9
Spartan Fancy 80	Asg	4	84.5	10.3	5.2	3.4
Cutlass	Sun	4	84.3	9.3	6.4	3.5
Goldpak 263	Asg	4	83.9	9.0	7.1	3.7
Dominator	Sun	4	83.5	9.3	7.2	3.1
Spartan Delite 80	Asg	3	83.3	11.0	5.7	3.5
Orange Sherbet	Sto	5	82.4	10.5	7.1	2.8
Saber 78	Sun	4	81.4	10.8	7.8	3.1
Dagger 78	Sun	5	78.9	13.3	7.8	3.4
Pak Mor	HM	5	78.0	11.8	10.2	2.9
Vitasweet 721	A&C	2	77.0	14.0	9.0	2.7
Golden State	Asg	3	76.5	11.2	12.3	2.5
Six Pak	HM	7	76.2	12.9	10.9	3.0
Sweet'N Crisp	Cro	3	75.9	15.7	8.4	2.8

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LONG TERM AVERAGES - CARROT CULTIVAR STORAGE TRIAL - PACKAGING TYPES - continued

Cultivar	Source	# Years Tested	% Marketable	% Weight Loss in Storage	% Decay	Degree* of Decay
Six Pak II	HM	5	75.7	13.0	11.3	2.2
Top Pak	HM	4	75.0	12.3	12.7	2.7
Chancellor	Asg	6	74.4	11.9	13.7	2.2
Orlando Gold	Sto	5	74.1	15.0	10.9	2.1
Paramount	Asg	3	73.0	13.3	13.7	3.1
Flavor Pak	Cro	3	72.3	15.5	12.2	2.6
Sierra	NK	3	72.0	10.6	17.4	2.5
Fanci Pak	NK	2	71.9	10.1	18.0	2.4
Cellobunch	Asg	3	71.8	14.4	13.8	2.0
Harvestmore	Cro	3	71.0	12.0	17.0	2.6
Seminole	Sun	2	71.0	12.0	17.0	2.5
Aristo Pak	Cro	5	70.8	13.6	15.6	2.3
Goldmine	Sun	3	69.6	12.8	17.6	1.8
Diplomat	Asg	4	69.0	15.2	15.8	2.8
Cimarron	HM	3	68.4	17.0	14.6	2.1
Britepak	A&C	3	68.0	15.0	17.0	2.2
Debut	Asg	2	66.5	15.2	18.3	1.5
Caropak	Asg	3	64.7	13.7	21.6	1.9

* 5 = Most Desirable

Listed in order of % Marketable

Storage period was usually 9 months

LONG TERM AVERAGE OF CARROT CULTIVARS - PACKAGING TYPES

Cultivar	Source	# Years Tested	Length		Marketable Yield		% Mkb.	Score
			cm	Inches	t/ha	B/A		
Spartan North	Cro	7	23.25	9.15	66.95	1192	85	4.20
Candy Pak	Cro	9	23.06	9.08	67.48	1201	86	4.27
Spartan Delite 80	MSU	4	22.88	9.01	75.25	1376	89	4.08
Scout	PETO	3	22.78	8.97	57.75	1028	75	3.83
Orlando Gold	Sto	7	22.63	8.91	69.18	1231	86	4.18
Dagger 78	Sun	8	22.39	8.81	70.62	1257	84	4.21
Spartan Fancy 80	JHK	5	22.12	8.71	70.01	1246	83	4.05
Six Pak	HM	9	22.07	8.69	74.32	1323	86	4.11
Harvestmore	Cro	6	21.92	8.63	71.44	1272	84	3.89
Sweet-N-Crisp	Cro	4	21.82	8.60	69.68	1240	86	3.92
Flavor Pak	Cro	4	21.73	8.56	73.43	1307	89	3.97
Gold Pride	HM	2	21.72	8.55	80.65	1436	86	4.21
Imperator 58	Cro	9	21.69	8.54	50.34	896	78	3.64
Gold Pak 263	Asg	6	21.58	8.50	60.67	1079	85	3.91
Golden State	Asg	4	21.26	8.37	71.58	1274	83	4.12
Cimarron	HM	3	21.17	8.33	69.33	1234	84	3.90
Britepak	A&C	6	21.17	8.33	65.43	1165	81	3.88
Grenadier	HM	14	21.11	8.31	65.94	1173	84	3.98
Spartan Winner 80	Cro	3	21.10	8.31	73.33	1306	82	3.78
Orange Sherbet	Sto	9	21.07	8.30	71.20	1267	85	3.85
Chancellor	Asg	6	21.02	8.27	71.65	1275	81	3.88
Canuck	Sto	16	20.99	8.26	64.46	1147	82	3.98
Caropak	Asg	8	20.93	8.24	74.11	1319	85	3.88
Spartan Premium 80	Cro	5	20.89	8.22	88.09	1568	88	3.92
Debut	Asg	3	20.89	8.22	67.53	1202	79	3.89

.../ continued

LONG TERM AVERAGE OF CARROT CULTIVARS - PACKAGING TYPES - continued

Cultivar	Source	# Years Tested	Length		Marketable Yield		% Mkb.	Score
			cm	Inches	t/ha	B/A		
Goldmine	Sun	3	20.82	8.20	71.68	1276	86	3.80
Diplomat	Asg	6	20.80	8.19	71.17	1267	84	3.93
Vitasweet 721	A&C	3	20.76	8.17	64.20	1143	79	4.09
Gold Pak 28	FM	12	20.76	8.17	55.91	996	85	3.84
Pak Mor	HM	5	20.74	8.16	62.40	1111	81	3.79
Six Pak II	HM	6	20.67	8.14	74.96	1334	87	4.01
Aristo Pak	Cro	5	20.65	8.13	75.24	1339	87	3.91
Paramount	Asg	7	20.55	8.10	82.14	1462	85	3.89
Canada Super X	PES	4	20.54	8.09	72.44	1290	81	3.95
Top Pak	HM	4	20.43	8.04	78.17	1392	87	3.86
Sierra	NK	5	20.38	8.02	70.29	1251	83	3.93
Cellobunch	Asg	6	20.31	8.00	81.28	1447	85	3.90
Dart	Sun	2	20.30	7.99	70.00	1246	78	3.80
King Emperor	NK	10	20.19	7.95	52.71	938	83	3.75
Spartan Delux	MSU	9	19.96	7.86	70.80	1260	84	3.97
Prospector	PETO	3	19.85	7.81	85.39	1520	81	4.15
Dominator	Sun	13	19.74	7.77	63.88	1137	85	3.85
Klondike Nantes	Sto	10	19.59	7.71	72.10	1283	85	3.87
Special Nantes 616	Sto	2	19.25	7.58	95.40	1698	84	3.65
Six Pence	HM	2	18.99	7.48	67.83	1207	79	3.75
Cello King	NK	3	18.82	7.41	78.02	1389	82	4.16
A Plus	Asg	3	18.71	7.37	70.96	1263	73	4.02
Mokum	BEJO	2	18.34	7.22	100.27	1785	83	4.09
Spartan Classic 80	Cro	3	17.93	7.05	63.33	1127	78	3.78
Pioneer	HM	10	16.60	6.54	64.00	1139	81	3.61
Vitasweet 500	A&C	3	15.80	6.22	82.25	1464	82	3.76
Scarlet Nantes	Asg	8	14.50	5.71	66.00	1175	75	3.46

5 = Most Desirable

Listed in Order of Length

CARROT CULTIVAR TRIALS - 1988 PROCESSING TYPES

MANAGEMENT PROCEDURES

Fertilizer: 330 kg/ha 15-6-15 + 10 kg/ha Borax was worked in deeply with a rotovator.

Seeded: On May 16 and 17 using a V belt seeder equipped with a 5 cm wide scatter shoe. The seeding rate was 45 seeds/m. Rows were 50 cm apart. The Main Trial was replicated three times.

Weed Control: Pre-emergence - 1.1 kg/ha Gesagard.
Post-emergence - 1.1 kg/ha Lorox + 2 L/ha Assist.

Minor Elements: 2 foliar sprays of 1 kg/ha Solubor
1 foliar spray of 1.8 kg/ha Calcium Nitrate
1 foliar spray of 3 kg/ha Epsom Salts

Fungicides: Fungicides were applied up to September 1.

Harvest: At harvest, October 17, data was taken of the presence of rusty root and leaf blights.

Storage: Samples placed in a temperature and humidity controlled storage (0°C) after harvest.

EVALUATION

The cultivars were evaluated after 7 weeks in storage.

Marketable yield t/ha: Marketable yield of roots over 38 mm (1 1/2") in diameter and also those 19 to 38 mm (3/4" to 1 1/2") in diameter.

Weight/Root (g): The average weight of a root > 38 mm (1 1/2") in diameter.

Crown Shape: A hollow crown received a lower mark.

Score: The average of the 10 marks from uniformity to uniformity of colour.

% Horizontal Lesions + Degree: The % of roots with horizontal lesions and the degree they were present on the roots. VL = very light - very few, very small lesions; L = light - few, small lesions; M = medium - medium sized lesions, or many small lesions, roots marginally marketable; H = heavy - many, large cavity spots, roots unmarketable.

Blight: In order to establish tolerance to leaf blights, fungicides not applied after Sept. 1.

CARROT CULTIVAR MAIN TRIAL - 1988 - PROCESSING TYPES

Cultivar	Source	Marketable Yield			Root							Colour					Score	% Horizontal Lesions and Degree
		t/ha	Weight/Root (g)	%	Length (cm)	Width (cm)	Uniformity	Smoothness	Crown Shape	Core Size	Resistance to Greening	External	Cortex	Camb. Zone	Core Size	Uniformity		
Camden	Sto	95	176	97	16	5.5	3.9	4.0	3.4	3.6	3.8	4.3	4.6	4.0	4.3	4.4	4.03	20L
Sunre 3129	Sun	95	189	98	17	5.3	3.4	3.8	3.3	3.7	4.1	4.1	4.2	3.9	4.0	4.2	3.87	40L
Dess Dan	Sun	105	198	95	19	5.0	3.4	3.8	3.6	3.8	3.9	3.9	4.1	3.9	4.0	4.1	3.85	50L
Processor II	Sto	102	192	96	17	5.6	3.2	3.9	3.4	3.4	4.0	4.0	4.0	4.1	3.9	4.0	3.80	33L
Fontana	BEJO	119	236	98	20	5.1	3.8	3.7	3.6	3.7	3.9	3.8	4.1	4.0	3.9	4.1	3.86	53L
Giant 114	PES	94	231	97	20	4.9	3.5	3.3	4.1	2.9	3.1	3.9	4.0	4.1	3.8	3.8	3.64	45L
Berlanda	BEJO	102	277	95	23	4.9	4.0	3.8	3.8	3.1	3.4	4.1	3.9	3.9	3.7	3.9	3.76	46M
Mark II	FM	77	204	89	15	6.1	3.6	3.8	3.4	3.6	3.7	3.9	4.1	3.9	3.7	3.9	3.76	53VL
XPH 985	Asg	85	182	95	21	5.1	3.7	4.0	3.4	3.9	4.3	4.0	4.3	3.6	3.9	3.7	3.88	32L
Eagle	Sto	112	204	97	21	4.6	3.4	3.7	3.6	3.5	3.9	4.0	3.9	3.8	3.8	3.7	3.73	60L
Sp. Bonus 80	Asg	93	192	99	19	5.3	3.5	3.7	3.4	3.7	3.8	3.9	4.1	3.6	3.8	3.8	3.73	33L
Ch. Supreme	HM	92	178	97	18	5.4	3.6	4.2	3.7	3.6	4.1	4.0	4.0	3.6	3.7	3.6	3.80	23L
Danvers 126	PES	83	171	100	16	5.4	3.7	3.6	3.7	3.6	3.8	3.7	3.7	3.5	3.4	3.4	3.60	50L

5 = Most Desirable

Listed in order of colour marks

56 t/ha = 25 T/A = 1000 bushels/a

Cottony core was observed in the cultivars Eagle and Berlanda. Berlanda also had some hollow core.

The cultivar Spartan Bonus 80 developed 4% seeders. Giant 114 and Danvers 126 were the only cultivars very lightly affected by rusty root. Most cultivars had good tolerance to blight and received a mark of 4 or better.

See index for cultivars suitable for slicing.

CARROT CULTIVAR ADAPTATION TRIAL - 1988 - PROCESSING TYPES

Cultivar	Source	Marketable Yield			Roots		Uniformity	Smoothness	Crown Shape	Core Size	Resistance to Greening	Colour				Score	% Horizontal Lesions and Degree	
		t/ha	Weight/Root (g)	%	Length (cm)	Width (cm)						External	Cortex	Camb. Zone	Core			
Ingot	A.Ch.	78	172	86	20	4.4	3.7	4.0	3.7	4.0	4.0	4.0	4.0	3.7	4.0	3.7	3.88	80L
Carogold	Aris	98	198	94	20	5.2	3.7	3.3	4.0	3.3	4.0	3.7	4.0	4.0	3.3	3.7	3.70	20VL
Century 88	Aris	85	221	95	22	4.3	3.3	3.3	4.0	3.0	3.7	3.7	4.0	4.3	3.7	4.0	3.70	20VL
Supervit	Aris	77	198	97	22	4.3	3.3	3.0	4.0	3.7	4.3	4.0	4.0	4.0	3.7	4.0	3.80	50L
Danba	Bak	105	241	90	17	5.5	3.7	3.7	3.7	3.0	4.0	3.7	4.0	3.7	3.7	3.7	3.69	90L
Gold King	Bak	92	213	100	22	4.9	4.0	3.7	3.7	4.0	4.3	4.0	4.3	3.7	4.0	3.7	3.94	60L
Naba	Bak	85	234	96	22	4.5	3.3	4.3	3.7	3.7	3.3	4.0	3.7	3.7	3.7	3.7	3.71	70M
Bangor	BEJO	159	293	97	22	5.1	4.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	3.7	3.7	3.74	30L
Flaxton	BEJO	119	271	100	23	4.9	4.0	3.7	3.3	3.3	3.7	4.0	4.3	4.3	4.3	4.3	3.92	50L
Fontana	BEJO	114	295	97	22	5.3	3.3	4.0	3.3	3.7	4.0	4.0	4.3	4.0	3.7	4.0	3.83	80L
Kamaran	BEJO	98	214	96	21	4.2	4.0	4.7	3.7	3.7	3.7	4.0	4.3	4.3	4.0	4.3	4.07	40L
Kazan	BEJO	105	256	91	23	5.2	3.7	3.3	3.3	3.7	4.0	4.3	4.7	4.3	4.3	4.3	3.99	60L
Koblenz	BEJO	89	287	100	24	5.2	3.3	3.3	3.7	3.3	3.7	4.0	4.3	3.7	3.7	3.7	3.67	40VL
Ch. Royal	PETO	84	232	84	15	6.4	3.7	3.3	3.7	3.7	3.7	3.3	3.7	3.7	3.7	4.0	3.65	70L
Laranda	Swy	124	309	84	23	4.6	3.7	4.0	3.7	3.7	3.3	3.7	3.7	4.0	3.3	3.7	3.68	70L
Falcon	Sun	104	313	92	23	5.2	3.0	3.3	3.7	3.3	3.3	4.3	4.0	3.7	4.3	4.0	3.63	100M
Cleopatra	Toz	84	219	94	20	5.1	3.0	4.0	3.7	3.7	3.7	4.3	4.7	3.7	4.3	4.0	3.91	100L

5 = Most Desirable

56 t/ha = 25 T/A = 1000 bushels/a

The cultivar Fontana had weak tops.

Danba, Laranda and Falcon were the only cultivars very lightly affected by rusty root.

Most cultivars had good tolerance to blight and received a mark of 4 or 5 except Carogold and Century 88 which received a mark of 3.

See index for cultivars suitable for slicing.

CARROT CULTIVAR STORAGE TRIAL 1987-88 - PROCESSING TYPES

Cultivar	Source	% Marketable	% Weight Loss In Storage	% Decay	Degree * of Decay
Dess Dan	Sun	86	6	8	3.3
Camden	Sto	84	5	11	4.3
Berdino	NZ	79	5	16	4.0
Goldini	NZ	78	3	19	4.0
Flamant	NZ	76	4	20	4.0
Flandria	NZ	74	6	20	4.0
Processor II	Sto	74	5	21	4.0
Camus	CS	74	3	23	4.0
Berlanda	Swy	69	5	26	3.0
Giant 114	PES	69	5	26	3.7
Danvers 126	NK	68	5	27	3.0
Oranza	BEJO	66	5	29	2.7
Bonchant	NZ	62	7	31	4.3
Royal Chantenay	NK	57	6	37	4.0
Gold King	NK	46	3	51	4.0
Average		71	5	24	3.8

* 5 = Most Desirable, no decay

Listed in order of % Marketable

Harvested October 19, 1987, placed in a cold storage where the relative humidity was kept at 95-100%. On April 5, 1988, the samples were moved to a Filacell storage where the relative humidity was kept at 98%. The temperature was kept between 0°C and 2°C.

3 Replications.

Judged: June 22, 1988

Total storage period = 35 weeks.

LONG TERM AVERAGES - CARROT CULTIVAR STORAGE TRIAL - PROCESSING TYPES

Cultivar	Source	# Years Tested	% Marketable	% Weight Loss In Storage	% Decay	Degree* of Decay
Spartan Premium	Sto	2	89.2	8.0	2.8	4.5
Danvers Gold	Jung	3	87.4	8.1	4.5	3.8
Dess Dan	Sun	8	84.3	9.5	6.2	3.6
Spartan Winner	Sto	3	84.1	9.3	6.6	4.3
Camden	Sto	4	81.8	9.4	8.8	3.4
Spartan Bonus 80	Asg	6	81.3	10.0	8.7	3.4
Red Cr. Chantenay	Asg	5	81.3	7.1	11.6	3.1
XPH 875	Asg	3	79.3	10.7	10.0	2.4
A&C 126	A&C	3	76.7	11.0	12.3	3.3
Triple Gold	Jung	3	76.0	9.7	14.3	3.8
King Midas	FM	2	76.0	9.5	14.5	3.0
Casey	Asg	4	75.5	9.0	15.5	3.5
Processor II	Sto	4	74.8	10.2	15.0	3.2
Flamant	NZ	2	74.5	6.5	19.0	3.4
Midas Touch	FM	3	74.1	10.3	15.6	3.5
Oranza	BEJO	3	73.3	6.3	20.4	2.8
Gold King	NK	3	71.7	6.3	22.0	3.7
Lucky's Gold	Jung	2	71.5	12.0	16.5	3.4
Danvers 126	Asg	5	71.2	8.2	20.6	2.7
Chantenay Red Cored	A.Ch.	3	67.7	11.3	21.0	3.3
Tahoe	NK	2	67.0	13.5	19.5	3.0
Royal Danvers	Agw	3	66.0	9.3	24.7	2.7
Giant 114	PES	4	64.5	11.0	24.5	3.5

* 5 = Most Desirable

Listed in order of % Marketable

Storage period was usually 8 months

LONG TERM AVERAGE OF CARROT CULTIVARS - PROCESSING TYPES

Cultivar	Source	# Years Tested	Marketable Yield		Colour	Score
			t/ha	T/A		
Berlicum Bierma	NZ	3	64.0	28.7	4.23	3.84
Processor II	Sto	5	91.3	40.8	4.17	3.93
Camden	Sto	5	78.0	34.8	4.14	3.99
Dess Dan	Sto	13	79.6	35.5	4.12	3.96
Danvers Gold	A.Ch.	2	73.4	32.7	4.12	3.88
Tahoe	NK	3	73.7	32.9	4.10	3.98
Spartan Bonus	Sto	11	75.0	33.5	4.08	3.94
Spartan Bonus 80	Asg	8	72.1	32.2	4.08	3.94
A&C 126	A&C	3	71.3	31.9	4.03	3.92
XPH 875	Asg	4	76.8	34.3	4.03	3.88
Casey	Asg	5	66.4	29.6	4.00	3.93
Spartan Delux	Jung	6	69.0	30.8	4.00	3.92
Lucky's Gold	A.Ch.	4	52.9	23.6	3.99	4.20
Spartan Winner	Jung	8	65.0	29.0	3.98	3.89
Midas Touch	FM	7	64.4	28.8	3.95	3.90
All Season Cross	Tak	4	76.0	34.2	3.95	3.84
XPH 985	Asg	4	81.0	36.2	3.94	3.80
Mark II	FM	7	77.1	34.4	3.94	3.80
Giant 114	PES	5	86.8	38.8	3.92	3.65
Ch. Red Cored	A.Ch.	6	71.5	31.9	3.88	3.70
Royal Danvers	Agw	4	70.0	31.2	3.86	3.84
Oranza	BEJO	4	72.2	32.5	3.86	3.69
Berlicum Berlinda	Asm	3	72.0	32.1	3.84	3.62
Spartan Premium	Cro	7	70.6	31.5	3.83	3.79
Danvers 126	Asg	12	67.1	30.0	3.77	3.66
Royal Chantenay	Sto	3	76.0	34.2	3.75	3.66
Gold King	NK	5	70.7	31.8	3.72	3.60
Red Core Chantenay	Asg	9	72.8	32.5	3.66	3.55

5 = Most Desirable

Listed in Order of Colour

NOTES

The following information was obtained from the records of the
 Department of the Interior, Bureau of Land Management, regarding
 the land owned by the United States in the area of the
 proposed project. The land is located in the
 State of California, County of San Diego, and is
 situated in the vicinity of the town of Escondido.
 The land is owned by the United States and is
 held in trust for the benefit of the people of
 the State of California. The land is being
 offered for sale to the highest bidder.
 The land is being offered for sale in
 accordance with the provisions of the
 Act of March 3, 1879, and the Act of
 March 3, 1890. The land is being
 offered for sale in accordance with the
 provisions of the Act of March 3, 1879,
 and the Act of March 3, 1890. The land
 is being offered for sale in accordance
 with the provisions of the Act of March 3,
 1879, and the Act of March 3, 1890.

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EARLY CELERY CULTIVAR TRIAL - 1988

MANAGEMENT PROCEDURES

Seeded: On March 14, the cultivars were seeded in the greenhouse. Transplanted to flats on April 19.

Fertilizer: - 500 kg/ha 20-8-20 + 15 kg/ha Borax
- 3 side dressings of 100 kg/ha Ammonium Nitrate (33%)

Transplanted: The cultivars were transplanted to the field on May 18 at a spacing of 60 cm X 19 cm. Replicated three times.

Weed Control: 2.2 kg/ha Gesagard

Minor Elements: Foliar sprays of Epsom Salts, Calcium Nitrate, Manganese Sulfate and Solubor were applied several times.

EVALUATION

Evaluation took place on August 4, 9 and 12. One replication was judged per date.

Marketable t/ha: The weight after the stalks were trimmed and cut to a length of 36 cm (14").

% 24's: The percentage of stalks which weighed ≥ 1.0 kg.

Nodal Cracking: Horizontal cracking on or below the nodes which is not caused by Boron deficiency.

EARLY CELERY CULTIVAR - MAIN TRIAL - 1988

Cultivar	Source	Marketable t/ha	% Trim Loss	% 24's	Petiole Length (cm)	Total Length (cm)	Diameter (cm)	Compactness	Boron Deficiency	Nodal Cracking	Yellow Leaves	Overall Rate
Florida 683 (K)	Sun	96	41	73	29	64	8.8	3.6	4.2	5.0	3.3	4.0
Deacon	HM	90	44	73	30	62	8.6	3.2	4.6	5.0	3.2	3.7
Florida 683	A&C	97	44	70	31	64	8.9	3.6	4.6	5.0	3.5	4.1
Tall Green Light	HM	92	48	63	30	65	8.8	3.1	5.0	5.0	3.6	3.7
Florida 683	RS	95	47	60	31	70	8.7	3.9	5.0	4.5	3.7	4.0
Bishop	HM	85	42	60	29	63	8.5	3.6	3.7	3.7	3.8	3.1
Ventura	Sto	92	43	57	34	67	8.7	3.3	4.4	5.0	3.2	3.7
Tall U. 52-70 (HK)	Sun	88	44	53	30	63	8.5	3.5	5.0	5.0	3.3	3.7
Vicar (CRY 004)	HM	87	45	53	30	61	8.2	2.7	3.8	4.1	3.0	2.4
Improved 52-70R	A&C	87	50	50	33	67	8.5	3.9	4.7	4.7	3.3	3.8
Advantage	MSU	87	41	50	34	63	8.7	3.2	4.6	5.0	4.1	3.9
Tall U. 52-70R IMP.	RS	87	48	47	34	65	8.5	3.4	4.7	4.7	3.3	3.9
Tall U. 52-10R	FM	82	51	47	33	66	8.7	3.8	4.6	4.8	3.5	3.8
Improved U. 52-70 *	Sto	85	50	43	32	68	8.5	3.8	4.0	5.0	3.7	3.8
CRY 003	HM	82	48	37	31	65	8.3	3.5	4.1	4.7	3.6	3.2
Summit *	Sto	81	42	35	30	62	8.2	3.0	5.0	5.0	4.3	3.5

Three replications except cultivars indicated by *, only two replications.

5 = Most Desirable

Listed in order of % 24's (earliness)

67 t/ha = 30 t/a = 1000 cartons/a

Seed stalks did not develop this spring.

Some vertical splitting was observed in the cultivars Bishop, Ventura, Vicar and CRY 003.

EARLY HEAD LETTUCE CULTIVAR MAIN TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Montello	A&C	68	17	100	-	15	17	4.2	4.3	4.0	5	3.8	
Cannon	Asg	69	19	100	-	16	50	4.3	4.7	4.6	5	3.8	
Classic	Asg	69	18	97	s.	15	23	4.2	4.6	4.1	4	3.9	
Fame	Asg	69	19	100	-	15	37	4.3	4.4	4.0	5	3.5	Many wrapper leaves
Green Lake	Asg	68	18	100	-	16	37	4.2	4.3	4.1	5	3.6	
Ithaca 989	Asg	69	21	100	-	15	27	4.3	4.4	4.4	5	4.0	
Mesa 659	Asg	69	18	100	-	14	80	4.4	4.0	3.6	4	2.3	
Saladcrisp	Asg	69	19	100	-	16	13	4.7	4.1	4.0	5	4.1	Many wrapper leaves
Maverick	PES	71	19	100	-	15	7	4.4	3.8	4.1	5	4.2	External suckers
Saladcrisp	PETO	69	19	97	s.	15	13	4.4	4.1	4.0	5	3.9	Small head, many wrap. lvs.
Kelvin	RS	69	21	100	-	16	83	4.4	3.7	3.8	10	1.3	Unsuitable, seeders
Chieftain	Swy	67	17	100	-	15	20	4.4	4.1	4.2	4	3.7	
Ithaca	Sieg	68	18	100	-	15	53	4.3	4.1	3.7	5	3.4	

Seeded May 11, 1988. Replicated 3 times. Spacing 43cm X 30cm.

5 = Most Desirable

Legend: Wt./Carton 18 Heads: 18 kg = 40 lbs

Reason Non-Marketable: s. = soft

Unsuitable = Cultivar not tolerant to climatic conditions in the Holland Marsh area.

Most cultivars received good marks for quality, except some tipburn was found when the heads were cut.

LATE HEAD LETTUCE CULTIVAR MAIN TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Montello	A&C	60	17	83	br.,sl.	16	0	3.1	3.9	3.8	8	3.7	Going to seed
Cannon	Asg	65	20	90	sl.,br.,s.	17	0	3.8	3.9	3.7	9	3.6	Going to seed
Classic	Asg	67	21	90	sl.,br.,s.	17	0	3.7	3.1	3.9	7	3.1	Does not firm up
Fame	Asg	70	22	97	br.	17	0	3.8	3.2	3.9	9	3.3	Many wrapper leaves
Green Lake	Asg	64	18	80	br.,sl.,s.	17	0	3.2	3.8	3.5	9	3.3	
Ithaca 989	Asg	63	21	93	br.,sl.	17	0	3.7	4.2	4.1	8	3.9	
Mesa 659	Asg	66	23	80	s.,sl.,br.	17	0	3.9	3.8	3.7	13	3.2	Going to seed
Saladcrisp	Asg	60	17	90	sl.,br.	15	0	3.2	3.9	3.9	6	3.6	
Maverick	PES	66	20	97	s.	17	0	3.8	3.2	3.6	12	2.8	Going to seed
Saladcrisp	PETO	63	22	93	sl.,s.	17	0	4.1	3.9	4.0	9	3.8	Nice, some off-types
Kelvin	RS				Does not firm up								Unsuitable, seeders
Chieftain	Swy	60	19	87	sl.,br.,s.	17	0	3.7	4.1	4.2	8	4.0	
Ithaca	Sieg	63	23	83	sl.,s.	17	0	3.9	4.0	3.8	11	3.6	Going to seed

Seeded July 5, 1988. Replicated 3 times. Spacing 43cm X 30cm

5 = Most Desirable

Legend: Wt./Carton 18 Head: 18 kg = 40 lbs
Reason Non-Marketable: sl. = slime
br. = bottom rot
s. = soft

Unsuitable = Cultivar not tolerant to climatic conditions in the Holland Marsh area.

Many cultivars showed a tendency of going to seed. This can be attributed to the warm and humid weather in July and early August. Daytime temperatures reached an average high of 30°C. This was followed by colder weather with night frost at ground level. No tipburn was found in any of the cultivars.

EARLY HEAD LETTUCE CULTIVAR ADAPTATION TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Montello	Asg	69	18	100	-	15	20	4.0	4.7	4.3	5	4.3	
XP5506	Asg	69	19	100	-	15	30	4.7	3.7	4.0	5	3.3	Small heads
XP5507	Asg	66	21	100	-	17	20	4.0	4.7	4.7	5	4.3	
XP5508	Asg	69	23	100	-	16	60	4.0	4.0	3.3	6	3.0	
XP5514	Asg	69	16	80	sl.,br.	15	50	3.3	4.3	4.3	5	3.3	
XP5517	Asg	69	18	100	-	15	20	3.7	4.3	4.3	6	4.3	
XP5519	Asg	69	17	100	-	15	20	4.0	4.3	4.3	6	3.7	
XP5524	Asg	69	26	90	sl.	17	40	4.3	4.7	4.7	6	3.7	Brown rib
XP5526	Asg	69	24	100	-	16	40	3.7	4.7	4.7	5	4.0	
Ithaca	Swy	69	24	100	-	16	50	4.3	4.3	4.0	6	3.3	
44063	UF	69	21	100	-	15	70	4.0	4.3	4.3	6	3.0	
49019	UF	69	20	100	-	15	80	4.0	4.7	4.0	7	3.3	
49654	UF	71	22	100	-	16	100	4.0	4.3	4.3	6	2.7	Harvested late
50011	UF	69	19	100	-	17	0	4.0	4.0	4.3	7	4.3	Brown rib
FLF1265	UF	69	25	100	-	17	90	4.3	4.3	4.3	6	3.0	

Seeded May 11, 1988. No Replications. Spacing 43cm X 30cm.

5 = Most Desirable

Legend: Wt./Carton 18 Heads: 18 kg = 40 lbs
Reason Non-Marketable: sl. = slime
 br. = bottom rot

Most cultivars received good marks for quality, except some tipburn was found when the heads were cut.

LATE HEAD LETTUCE CULTIVAR ADAPTATION TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Montello	Asg	59	18	70	br.,sl.,s.	16	0	3.0	4.0	3.3	8	3.3	
XP 5506	Asg	59	21	100	-	17	0	3.7	3.7	4.0	10	3.7	Going to seed
XP 5507	Asg	63	25	80	sl.	18	0	4.0	4.3	4.0	12	3.3	Going to seed
XP 5508	Asg	59	20	100	-	17	0	4.0	4.3	4.0	9	4.3	Going to seed
XP 5514	Asg	59	16	90	s.	16	0	3.0	4.3	4.3	8	4.0	Going to seed
XP 5517	Asg	59	17	90	sl.	16	0	3.3	4.3	4.0	9	3.7	Going to seed
XP 5519	Asg	57	15	100	-	14	0	3.3	4.0	3.7	6	3.7	
XP 5524	Asg	66	20	70	br.sl.	17	0	3.3	3.0	3.3	16	2.7	Seeders
XP 5526	Asg	66	19	70	br.	17	0	2.0	3.0	3.7	12	2.7	Seeders
Ithaca	Swy	66	22	90	br.	18	0	3.3	3.7	4.0	14	3.3	Seeders
44063	UF	63	21	70	sl.,br.	16	0	3.3	3.7	3.0	12	2.7	Going to seed
49019	UF	66	19	90	br.	17	0	3.7	3.7	3.3	11	3.7	Top shaped,
49654	UF	66	17	20	se.	17	0	3.3	4.0	3.7	15	1.0	Seeders
50011	UF	66	21	90	se.	17	0	3.7	3.0	3.7	16	3.0	Seeders
FLF 1265	UF	59	17	80	br.	17	0	3.0	3.3	3.7	8	2.7	Going to seed

Seeded July 5, 1988. No replication. Spacing 43cm X 30cm.

5 = Most Desirable.

Legend: Wt/Carton 18 Heads: 18 kg = 40 lbs.

Reason Non-Marketable: sl. = slime s. = soft
 br. = bottom rot se. = seeders

Many cultivars showed a tendency of going to seed. This can be attributed to the warm and humid weather in July and early August. Daytime temperatures reached an average high of 30°C. This was followed by colder weather with night frost at ground level. No tipburn was found in any of the cultivars.

EARLY ROMAINE LETTUCE CULTIVAR MAIN TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Height (cm)	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Corsica	A&C	64	14	100	-	30	14	18	4.6	3.7	4.0	7	3.8	Not as crisp
Parris Island Cos	Asg	66	16	100	-	29	15	3	4.9	3.9	4.4	9	4.2	
Valmaine	Asg	66	15	100	-	27	14	20	4.9	3.9	4.0	8	3.3	Short
BB Blond	Bak	62	13	100	-	29	13	0	5.0	3.5	4.1	10	3.3	Light green, not crisp
Signature	Bak	63	13	100	-	28	14	3	4.9	3.9	4.0	7	3.7	
Green Towers	HM	64	15	100	-	28	15	0	4.8	4.0	4.1	8	3.9	Brown rib
Tall Guzmaine	PES	67	16	100	-	29	15	0	4.4	4.3	4.1	8	4.3	
Corisca	Sieg	63	14	100	-	30	14	33	4.7	4.1	4.1	7	3.7	
Parris Island Cos	Sieg	65	15	100	-	29	14	0	5.0	3.9	4.4	9	4.1	
Valmaine	Sieg	67	16	100	-	29	15	10	4.7	4.2	4.0	8	3.8	
Cosmic	Toz	63	14	100	-	29	15	60	4.7	3.9	4.1	6	3.2	Ext. suckers, brown rib
Lobjoits Green Cos	Toz	62	13	100	-	28	14	33	5.0	3.9	3.6	10	3.3	

Seeded May 11, 1988. Replicated 3 times. Spacing 43cm X 25 cm.

5 = Most Desirable

Legend: Wt/Carton 18 Heads: 15 kg = 33 lbs

LATE ROMAINE LETTUCE CULTIVAR MAIN TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 heads (kg)	% Marketable	Reason Non-Marketable	Height (cm)	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Corsica	A&C	52	14	100	-	32	13	0	3.9	4.1	3.9	13	3.9	Light colour
Parris Island Cos	Asg	54	14	97	se.	30	12	3	3.9	3.7	3.7	14	3.7	
Valmaine	Asg	52	12	100	--	29	13	0	3.9	3.5	3.4	14	3.4	Going to seed
B B Blond	Bak	49	10	23	se.,tb.	30	11	40	3.9	3.5	3.7	17	2.0	Light green
Signature	Bak	50	12	93	tb.	29	12	7	4.4	3.9	3.9	10	3.8	Nice, but small
Green Towers	HM	56	16	100	-	32	13	0	4.2	3.7	3.8	16	3.8	Going to seed
Tall Guzmaine	PES	56	18	97	br.	32	13	0	3.9	4.6	4.4	12	4.4	very nice
Corsica	Sieg	50	13	90	se.	30	13	0	3.8	3.9	3.6	12	3.5	
Parris Island Cos	Sieg	52	14	100	-	30	13	0	4.1	3.6	3.7	15	3.6	Going to seed
Valmaine	Sieg	50	11	87	se.	26	12	0	3.4	3.7	3.8	11	3.1	Going to seed
Cosmic	Toz	53	15	83	tb.	28	13	23	3.8	3.9	4.1	12	3.5	
Lobjoits Green Cos	Toz	49	11	33	tb.se.s.	29	12	53	4.1	3.5	3.8	13	2.4	Going to seed

Seeded July 5, 1988. Replicated 3 times. Spacing 43cm X 25cm.

5 = Most Desirable

Legend: Wt/Carton 18 Heads: 15 kg = 33 lbs

Reason Non-Marketable: se. = seeder s. = soft
br. = bottom rot tb. = tipburn

Many cultivars showed a tendency of going to seed. This can be attributed to the warm and humid weather in July and early August. Daytime temperatures reached an average high of 30°C. This was followed by colder weather with night frost at ground level.

EARLY ROMAINE LETTUCE CULTIVAR ADAPTATION TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Height (cm)	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
XP 825	Asg	64	16	100	-	30	15	0	5.0	4.0	4.0	9	4.3	Nice
XP 999	Asg	69	15	100	-	28	14	0	5.0	3.7	4.0	16	3.7	Harvt. late, going to seed
XP 5490	Asg	66	14	100	-	29	15	0	5.0	3.7	4.3	10	4.0	
XP 5491	Asg	64	18	100	-	31	14	60	5.0	4.3	4.0	13	3.3	
PSR 185A	PETO	71	19	100	-	31	17	0	4.3	3.3	4.3	9	3.7	
PSR 185C	PETO	71	17	100	-	30	14	0	4.3	3.3	4.3	7	4.0	
PSX 50786	PETO	69	19	100	-	31	14	100	4.0	3.7	3.3	12	2.0	Brown rib
PSX 50886	PETO	69	22	100	-	32	16	0	4.7	4.7	4.7	9	4.3	Ext.suckers, burnt lv. edges
Parris Is. Cos	RS	64	19	100	-	30	15	0	5.0	4.0	4.3	10	4.3	
43007	UF	64	13	100	-	23	15	0	4.0	4.7	4.7	7	-	Very nice, but very short
43008	UF	69	18	100	-	28	15	0	5.0	4.0	4.3	11	3.7	Short
50100	UF	62	14	100	-	26	14	0	4.7	4.0	4.0	11	3.0	Does not close in
50105	UF	71	23	100	-	31	16	30	4.3	4.3	4.0	12	4.0	Good except tipburn

Seeded May 11, 1988. No replication. Spacing 43cm X 25cm.

5 = Most Desirable

Legend: Wt/Carton 18 Heads: 15 kg = 33 lbs

LATE ROMAINE LETTUCE CULTIVAR ADAPTATION TRIAL - 1988

Cultivar	Source	Days to Harvest	Weight/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Height (cm)	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
XP 825	Asg	52	12	100	-	30	12	0	4.3	3.7	3.7	13	3.7	Going to seed
XP 999	Asg	55	16	100	-	31	14	0	4.0	3.7	3.7	21	3.7	Going to seed
XP 5490	Asg	50	12	100	-	30	13	0	3.3	4.0	4.3	13	4.0	Going to seed
XP 5491	Asg	52	14	100	-	32	12	0	4.3	3.3	4.0	16	3.3	Going to seed
PSR 185A	PETO	57	13	100	-	27	13	0	3.7	4.3	4.3	9	3.3	Short
PSR 185C	PETO	57	14	100	-	28	12	0	3.7	4.0	3.0	9	3.3	Short
PSX 50786	PETO	51	12	100	-	29	12	0	3.7	4.0	3.9	12	3.7	
PSX 50886	PETO	55	19	90	br.	32	14	0	3.0	4.0	4.0	13	4.0	
Parris Island Cos	RS	52	13	100	-	29	13	5	4.0	3.7	3.7	12	3.3	
43007	UF	55	12	80	se.	25	12	0	4.0	4.3	3.7	11	3.3	Short, going to seed
43008	UF	50	12	80	se.	25	13	0	3.3	4.0	3.0	12	2.7	Short, going to seed
50100	UF	50	9	10	se.	24	13	0	4.0	4.0	3.7	13	2.0	Short seeders
50105	UF	52	13	100	-	28	13	0	4.3	4.7	4.3	9	4.3	Short, nicely filled

Seeded July 5, 1988. No replication. Spacing 43cm X 25cm

5 = Most Desirable

Legend: Wt/Carton 18 Heads: 15 kg = 33 lbs
Reason Non-Marketable: se. = seeder
br. = bottom rot

Many cultivars showed a tendency of going to seed. This can be attributed to the warm humid weather in July and early August. Daytime temperatures reached an average high of 30°C. This was followed by colder weather with night frost at ground level. No tipburn was found in any of the cultivars.

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ONION CULTIVAR TRIALS - 1988

MANAGEMENT PROCEDURES

Fertilizer: 500 kg/ha 20-4-40 + 25 kg/ha Copper Sulfate

Seeded: May 2 and 3, the cultivars were seeded at 43 seeds/m, in rows 43 cm apart. A V-belt seeder equipped with a 5 cm wide scatter shoe was used. Seed was coated with Pro-Gro. Lorsban 15G was applied at 18 kg/ha in the seed furrow. Main Trial was replicated 3 times.

Weed Control: Pre-emergence: 2.5 L/ha Gramoxone
Loop Stage: 9.0 L/ha Radox + 9.0 L/ha CIPC tank mixed
Post-emergence: 156 ml/ha Goal at the 2 leaf stage
375 ml/ha Goal at the 3 leaf stage
1.5 L/ha Poast + 5 L/ha Assist at the 3 leaf stage
280 ml/ha Goal at the 5 leaf stage
5.6 L/ha Radox at the 7 and 8 leaf stage

Sprout Inhibition: MH 60 SG was applied at 6.25 kg/ha in 500 L/ha water on August 17.

Harvest: The trials were pulled on September 15 and topped on September 23.

Storage: The samples were placed in a forced air and temperature controlled storage.

EVALUATION

All trials were evaluated mid-November after 7 weeks of artificial curing and storage.

Marketable Yield: # 1 smalls (32-44 mm) and # 1 large (over 44 mm).

Weight/Bulb (g): The total weight in grams of all bulbs divided by the total number of bulbs.

Firmness A: Evaluated on September 23, at harvest.

Firmness B: Evaluated in mid-November, after artificial curing and drying.

Skin Thickness: 4 = most desirable, 2 good skins, dry underneath.
A score < 4 indicates less skin
A score > 4 indicates a thicker skin with a risk of increasing wetness and skin rot.

Score: The average of six marks from Firmness B to Neck Finish, excluding Skin Thickness

NOTE: An Observation Trial of 65 numbered cultivars was grown for the benefit of the breeders. Evaluation was done by breeders.

ONION CULTIVAR MAIN TRIAL - 1988

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Small's	% Non-Marketable	Weight/Bulb (g)	Firmness		Uniformity		Colour	Skin Thickness	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape					
Eskimo	Tak	102	23	46	822	3	4	91	4.2	3.8	3.7	4.0	3.8	3.9	4.1	4.2	3.93
Norstar	Tak	102	24	51	908	5	3	93	3.7	3.0	3.7	3.6	3.3	3.5	3.3	4.4	3.56
Advancer	HM	107	23	56	997	3	1	107	4.0	3.8	3.8	3.9	3.4	4.1	4.2	3.7	3.81
Hustler	HM	107	19	42	751	5	8	102	3.9	3.4	3.7	3.3	3.6	4.0	4.7	3.9	3.77
Columbia	FM	107	33	52	925	15	2	68	4.1	3.6	3.1	3.6	3.7	3.9	4.0	3.8	3.62
Tarmagon	Sto	108	25	57	1007	2	1	101	4.1	3.8	3.7	3.7	3.8	4.0	3.8	4.0	3.79
Super Spice II	Sto	111	20	40	710	7	1	86	4.2	3.8	3.4	3.8	3.9	4.1	4.7	3.8	3.91
Paragon	Sun	112	24	58	1035	3	1	107	4.2	4.1	3.7	4.1	4.0	4.2	4.6	3.7	4.02
Exporter II	Sto	112	16	47	839	0	1	126	3.9	4.1	4.0	3.7	3.9	4.3	4.6	3.9	4.02
Bronze Reserve	FM	112	21	38	673	9	3	79	3.9	3.7	3.5	3.4	3.6	4.2	4.3	3.6	3.68
Taurus	Asg	114	17	48	853	2	4	128	3.7	3.8	3.8	3.6	4.0	4.4	4.7	3.9	3.96
Bingo	Sto	115	24	54	954	7	0	95	4.1	4.0	3.4	3.3	3.8	4.1	4.7	3.8	3.84
Hi Score	EJ	116	20	52	921	3	1	111	4.0	3.9	3.7	3.5	3.9	4.3	4.7	3.9	3.92
XPH 3370	Asg	116	19	55	978	3	1	124	3.9	3.7	4.0	3.8	3.8	4.2	4.7	3.4	3.90
Suntan	Swy	116	25	50	892	8	2	88	3.8	3.8	3.6	4.0	3.6	4.0	4.3	3.8	3.85
Capable	Sun	116	21	56	990	3	2	118	3.9	3.8	3.2	2.8	3.6	4.1	4.5	3.7	3.58
Django	VDH	117	24	46	821	7	3	86	3.7	3.5	3.6	3.7	3.5	4.1	4.0	3.7	3.64
Cuprum	Sun	118	22	47	841	7	2	93	4.0	3.9	3.7	3.6	3.8	4.0	4.4	3.9	3.88
Sassy Brassy	FM	119	29	56	991	8	1	85	3.7	3.4	3.7	3.3	3.7	4.2	4.2	3.6	3.65
Copra	Sieg	120	22	59	1050	2	1	118	4.0	4.0	3.4	3.8	3.8	4.3	4.6	3.9	3.92
XPH 3330	Asg	125	16	53	938	2	0	143	3.9	3.9	3.6	3.9	3.8	4.3	4.7	3.8	3.94
Flame (3272)	Asg	125	18	57	1014	2	2	139	3.7	3.4	3.8	3.1	3.7	4.3	4.7	3.7	3.73
HMX 2621	HM	127	18	51	914	1	1	124	4.0	4.0	3.8	3.5	3.8	4.4	4.7	3.7	3.90
Sweet Sandwich	PES	129	27	63	1115	5	2	103	3.4	3.8	3.6	3.4	3.7	4.4	4.7	3.7	3.81
Class Pak	FM	129	17	57	1006	1	4	148	3.7	3.6	3.3	2.9	3.6	4.5	4.7	3.2	3.54

5 = Most Desirable, except for Skin Thickness Listed in order of Days to Maturity
 Due to poor maggot control, days to maturity and yield were effected by poor stand/meter.

Legend: Stand/Meter: 33 bulbs/m = 10 bulbs/ft

Marketable Yield: 56 t/ha = 25 t/a = 1000 bags/acre

Weight/Bulb (g): A bulb 57 mm (2 1/4") in diameter weighs 100 g
 A bulb 64 mm (2 1/2") in diameter weighs 135 g

ONION CULTIVAR ADAPTATION TRIAL - 1988

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Small's	% Non-Marketable	Weight/Bu1b (g)	Firmness		Uniformity		Colour	Skin Thickness	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape					
Keepsweet II	A&C	126	20	56	991	1	7	127	3.7	3.7	3.7	3.3	3.3	4.3	4.3	3.7	3.67
Superior	A&C	125	23	62	1107	2	1	116	4.0	3.7	3.3	3.3	3.3	4.3	4.7	4.0	3.72
Gambler	Agw	112	19	51	911	4	3	118	4.0	3.3	3.3	3.3	3.0	4.0	4.0	3.7	3.43
Aries	Asg	105	21	42	751	3	1	86	4.3	3.7	3.3	4.0	3.7	3.7	3.7	4.3	3.78
XPH 3243	Asg	112	27	55	986	5	2	91	4.3	3.7	3.7	3.7	3.3	4.0	4.3	4.0	3.78
XPH 3246	Asg	119	26	70	1239	1	0	117	4.3	4.0	4.0	3.7	3.3	4.0	4.7	3.7	3.90
XPH 3282	Asg	117	30	62	1098	6	5	94	4.3	3.7	3.7	3.3	3.7	4.0	4.7	4.0	3.85
XPH 3311	Asg	121	16	61	1080	1	0	161	4.3	3.7	3.7	4.0	3.3	4.3	4.7	3.7	3.85
XPH 3407	Asg	125	15	49	879	2	0	142	4.3	3.7	3.7	4.0	3.7	4.3	4.7	4.0	3.97
Hyfast	BEJO	131	19	37	655	7	2	86	4.0	3.7	3.3	3.0	3.0	4.0	4.0	3.7	3.45
Spirit *	BEJO	121	16	61	1079	1	0	160	4.0	4.0	3.7	4.3	3.3	4.3	4.7	3.7	3.95
Autumn Keeper	Cro	112	23	53	949	3	2	103	4.0	3.7	3.3	3.7	3.7	4.0	4.3	3.7	3.73
Early Pak	Cro	117	18	49	878	1	3	125	4.3	3.7	3.0	3.3	3.3	4.3	4.7	3.7	3.62
Golden Treasure	Cro	121	22	54	954	5	6	112	4.0	3.7	3.7	3.7	4.0	4.3	4.7	3.7	3.92
Enterprize	E.J.	112	15	35	619	3	1	98	3.7	3.7	3.0	3.7	3.7	4.3	4.7	3.7	3.75
Trapps # 6	E.J.	112	20	41	723	4	1	87	4.0	3.7	3.3	3.7	3.7	4.0	4.0	4.0	3.73
Trapps # 8	E.J.	112	20	48	856	4	0	103	4.0	3.7	3.3	3.7	3.7	4.0	4.3	4.0	3.78
Vanguard	E.J.	121	18	49	869	2	0	117	4.0	3.7	3.7	3.7	3.3	4.0	4.3	4.0	3.78
Gibraltar	FM	112	24	42	744	15	4	76	3.7	3.7	3.0	3.7	3.3	4.3	4.3	3.7	3.62
Rip Van Winkle	FM	112	24	51	911	3	1	94	4.0	3.7	3.7	3.7	4.0	4.0	4.0	4.8	3.98
HMX 2612	HM	112	19	43	767	5	5	101	4.3	4.0	3.7	3.7	3.7	4.0	4.3	4.0	3.90
Autumn Pride	JHK	126	20	76	1358	3	0	167	3.7	3.7	4.0	3.0	3.7	4.3	4.7	3.3	3.73
Autumn Splendor	JHK	105	18	38	669	2	6	96	4.0	3.7	4.0	4.0	4.0	4.0	3.7	4.3	3.95
Sun Glo	JHK	126	16	57	1015	2	4	161	3.7	3.3	4.0	2.7	3.0	4.3	4.3	3.7	3.50
Marathan	Kan	126	18	66	1166	1	0	154	4.0	3.7	4.0	3.7	3.3	4.3	4.7	3.3	3.78
Granex *	Kini	105	15	19	334	14	36	81	3.3	3.3	3.3	3.7	2.3	1.7	1.0	4.3	2.98
Krummery Banner	Kru	133	17	62	1105	1	5	167	4.0	4.0	3.7	3.0	3.3	4.3	4.3	3.3	3.60
Franklin *	NZ	110	15	36	643	4	9	110	4.3	3.7	3.0	3.3	2.7	4.0	3.0	4.3	3.33

.../ continued

ONION CULTIVAR ADAPTATION TRIAL - 1988 - continued

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Small's	% Non-Marketable	Weight/Bulb (g)	Firmness		Uniformity		Colour	Skin Thickness	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape					
Imelda	NZ			No	Germination												
Nemo	NZ	98	17	28	491	17	2	72	3.7	3.7	2.7	4.0	4.0	1.7	2.0	4.3	3.45
Numancia	NK	134	18	71	1269	0	8	190	3.0	3.3	3.7	3.3	2.7	4.7	4.7	3.0	3.45
Prego *	NK	128	13	34	602	0	21	141	3.7	4.0	3.3	3.7	3.3	4.3	4.7	3.0	3.67
Rondo *	NK	134	12	50	886	0	12	204	3.7	3.7	3.3	3.7	3.3	4.7	4.7	3.3	3.67
Sedry *	NK	134	11	25	440	0	26	129	3.7	3.7	3.7	3.7	3.3	4.0	4.3	2.7	3.57
Apex	PES	121	15	53	936	2	0	147	4.0	3.7	3.7	3.3	3.7	4.3	4.7	3.3	3.73
Simcoe	PES	103	17	49	876	0	1	125	4.3	4.0	3.7	4.0	4.0	4.0	4.7	4.0	4.07
Prevailer *	Sieg	128	13	50	888	0	0	162	3.7	4.0	3.7	3.3	3.7	4.3	4.7	3.7	3.85
Spartan Banner 80	Sieg	126	11	49	870	0	2	193	3.7	3.7	4.0	3.0	3.3	4.3	4.7	3.3	3.67
Valiant	Sieg	121	16	60	1068	1	0	164	4.0	4.0	3.7	3.7	3.7	4.3	4.7	3.0	3.80
Canada Maple	Sto	117	15	47	829	0	0	131	4.0	3.7	4.0	3.7	3.3	4.3	4.7	3.7	3.85
Imp. Autumn Spice	Sto	117	17	49	878	2	4	132	4.0	3.7	3.7	3.7	3.7	4.0	4.7	3.7	3.87
Russet	Sto	121	18	58	1032	0	4	140	3.7	3.7	3.3	3.0	3.3	4.3	4.3	3.3	3.48
N. York Early	Sun	114	15	51	915	2	14	167	3.3	3.3	4.0	3.0	3.3	4.7	4.7	3.7	3.67
Sunre 1499	Sun	107	19	31	550	5	14	82	3.7	3.3	3.3	3.7	3.0	3.3	3.0	4.0	3.38
Clipper	VDH	114	17	51	913	2	1	129	3.7	3.3	4.0	4.0	4.0	4.3	4.7	4.0	4.00

5 = Most Desirable, except for Skin Thickness

* Flat shaped bulb

Due to poor maggot control, days to maturity and yield were affected by poor stand.

Legend: Stand/Meter: 33 bulbs/m = 10 bulbs/ft

Marketable Yield: 56 t/ha = 25 T/A = 1000 bags/acre

Weight/Bulb (g): A bulb 57 mm (2 1/4") in diameter weighs 100 g
 A bulb 64 mm (2 1/2") in diameter weighs 135 g

TRANSPLANTED SPANISH ONION CULTIVAR TRIAL - 1988

MANAGEMENT

Seeded: On March 14, twenty cultivars were seeded in speedling trays filled with Pro-Mix G at 4 seeds per cell (3 cm X 3 cm). The cultivars were thinned to 1 plant per cell at the 1st true leaf. They were clipped regularly to a height of 12 cm to promote sturdy plants.

Fertilizer: Greenhouse - 2 applications of 20-20-20 at a rate of 3 kg/1000 L water.
- 1 application of 10-52-10 at a rate of 6 kg/1000 L water.

Field - 666 kg/ha 15-3-30 + 25 kg/ha Copper Sulfate.

Transplanted: Three replications were planted in the field on May 20 at a spacing of 43 cm X 12 cm. After transplanting, 25 kg/ha Lorsban 15G was spread in a band over the row and covered with 1 cm of soil. A drench treatment of Birlane 25% WP was applied at 1.25 kg/1000 L water at 170 ml water per plant on June 1 just prior to peak egg deposition of the first generation onion maggot fly.

For information on post-emergence weed control, refer to Onion Cultivar Trial Management Procedures.

Harvest: On September 15, all cultivars were pulled, topped by hand, and left in the field. On September 19, they were placed in a forced air and temperature controlled storage to further dry and cure the bulbs. The temperature was set a 26°C. The relative humidity varied from 30% to 60%.

EVALUATION

Evaluation was done on October 12 and 13 after 3 1/2 weeks in storage.

Maturity Date: Date when 85% of the tops were down.

% Marketable: Onions over 45 mm in diameter.

Weight/Bulb (g): The weight of all bulbs divided by the total number of bulbs.

Rings Over 3 cm: The total number of complete rings over 3 cm diameter in 10 bulbs.

Score: The average of the 6 marks from Uniformity to Neck Finish.

TRANSPLANTED SPANISH ONION CULTIVAR TRIAL - 1988

Cultivar	Source	Maturity Date	Marketable Yield		% Marketable	% Seeders	Weight/Bulb (g)	% Single Centres	# Rings Over 3 cm	Uniformity		Firmness	Colour	Skinning	Neck Finish	Score
			t/ha > 75 mm	b/a > 75 mm						Size	Shape					
Armada	Asg	Aug. 28	46	824	62	25	407	14	61	3.7	3.7	3.6	3.4	3.2	3.6	3.53
Yula	Asg	Aug. 11	37	663	54	1	364	0	45	3.9	3.9	3.8	3.3	2.1	4.4	3.57
Vega	Asg	Sept. 01	43	758	67	29	357	7	68	3.4	3.2	3.9	3.8	3.4	4.0	3.62
Maya	Asg	Aug. 21	56	999	80	11	378	20	73	3.7	3.8	3.7	4.1	3.2	4.2	3.78
Big Mac	Cro	Aug. 31	71	1262	82	13	455	47	77	3.2	3.2	3.4	3.5	3.5	3.3	3.35
Ringmaker	Cro	Aug. 25	58	1028	75	22	402	20	75	4.1	3.7	3.7	3.7	3.4	4.0	3.77
Sweet Amber	Cro	Aug. 26	57	1017	68	24	441	26	76	4.1	3.7	3.6	4.0	3.4	3.5	3.72
Bullseye	FM	Sept. 02	44	782	73	24	352	34	71	3.9	3.6	3.9	3.9	3.8	3.7	3.80
Oro Grande	FM	Sept. 01	53	949	69	31	437	26	73	3.8	3.9	3.9	3.8	3.9	3.7	3.83
Sweetheart	FM	Sept. 01	39	695	68	25	322	46	68	3.8	3.6	3.9	3.8	3.5	3.9	3.75
Fiesta	Sto	Aug. 20	43	768	86	2	306	6	44	3.7	3.4	4.0	3.5	3.5	3.6	3.62
Riverside Sweet	Sto	Sept. 10	39	686	53	40	382	14	63	4.0	3.1	3.7	4.0	3.2	3.0	3.50
Valiant	Sto	Aug. 25	63	1123	91	7	362	6	63	3.7	3.3	4.2	4.0	3.5	3.6	3.72
Brahma	Sun	Aug. 17	63	1115	83	13	399	14	71	4.1	4.0	3.9	4.0	3.7	4.0	3.95
Bravado	Sun	Sept. 02	44	783	58	38	410	26	68	3.5	3.8	3.7	3.8	3.3	3.9	3.67
Bullring	Sun	Aug. 26	47	832	61	37	406	46	87	4.3	4.2	4.3	4.2	4.0	3.6	4.10
Cima	Sun	Sept. 05	61	1077	90	6	389	14	59	3.5	3.4	4.0	3.9	4.2	3.4	3.73
Golden Cascade	Sun	Aug. 22	48	857	66	17	390	0	65	3.9	3.6	4.0	3.6	3.0	3.7	3.63
Winner	Sun	Aug. 22	50	883	65	31	415	14	73	3.5	3.7	3.9	3.9	3.4	3.6	3.67
Durango	Sun	Sept. 11	59	1058	72	26	454	40	69	4.2	3.9	3.4	4.2	4.1	2.8	3.77

5 = Most Desirable

RED ONION CULTIVAR TRIAL - 1988

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% Non-Marketable	Weight/Bulb (g)	Firmness		Uniformity		Colour		Skin Thickness	Skinning	Neck Finish	Score
				t/ha	b/a			A	B	Size	Shape	External	Internal				
MAIN TRIAL - 2 REPLICATIONS																	
Big Red	Twy	126	17	66	1183	2	174	3.3	3.3	3.7	2.7	3.9	3.5	4.3	4.3	2.9	3.46
Red Baron	Sieg	130	16	48	853	7	137	3.7	3.7	3.5	2.8	3.8	3.9	4.2	4.3	3.0	3.56
Cherokee Red *	Bak	131	18	39	693	25	123	3.7	3.7	2.5	4.7	3.7	4.2	3.7	3.4	3.9	3.71
Benny's Red	HM	134	13	43	769	27	193	2.7	3.0	3.5	2.9	3.0	3.2	4.5	4.3	2.7	3.21
ADAPTATION TRIAL - 1 REPLICATION																	
NIZ 0129 *	NZ	107	18	23	406	35	82	3.3	3.3	3.0	3.7	3.0	3.7	3.0	3.0	4.3	3.42
NIZ 1063 *	NZ	114	16	43	762	14	136	4.0	3.7	3.7	3.7	3.0	3.7	3.0	2.0	4.0	3.40
NIZ 1057	NZ	117	16	51	913	12	154	3.7	4.0	3.3	3.7	3.0	3.3	4.0	3.7	3.7	3.53
SR 9112-1	Sun	125	19	61	1084	0	139	3.0	3.7	4.0	3.0	4.0	4.0	4.0	4.0	3.3	3.71
Tango	Sun	125	18	55	986	11	146	3.3	3.3	3.3	3.7	4.0	3.7	4.3	4.3	3.3	3.66

5 = Most Desirable, except for the Skin Thickness (See Onion Trials Information).

Listed in order of Days to Maturity

* Flat shaped bulb

Due to poor maggot control, days to maturity and yield were affected by poor stand

Legend: Stand/Meter: 33 Bulbs/m = 10 bulbs/ft

Marketable Yield: 56 t/ha = 25 T/A = 1000 bags/acre

Weight/Bulb (g): A bulb 57 mm (2 1/4") in diameter weighs 100 g
A bulb 64 mm (2 1/2") in diameter weighs 135 g

Score: The average of the seven marks from Firmness B to Neck Finish, excluding Skin Thickness.

ONION CULTIVAR STORAGE TRIAL - SEPTEMBER 29, 1987 - AUGUST 08, 1988

Cultivar	Source	% Weight Loss	% Rot	% Sprouts	% Soft	% Mkb.	* Firmness	
							Sept. 24/87	Aug. 08/88
Copra	A.Ch.	7	1	0	0	92	4.4	4.0
Suntan	Swy	7	1	0	0	92	4.5	3.9
Cuprum	Sun	8	0	0	0	92	4.3	3.8
Capable	Sun	8	0	0	1	91	4.1	3.8
Taurus	Asg	7	1	0	1	91	4.3	3.6
Paragon	Sun	8	0	0	1	91	4.3	4.0
Bingo	Sto	8	1	0	0	91	4.3	3.9
Super Spice II	Sto	9	1	0	0	90	4.3	3.8
Autumn Splendor	JHK	8	1	1	0	90	4.0	3.8
Hustler	HM	8	1	1	0	90	4.2	3.8
Flame	Asg	7	1	0	2	90	4.4	3.3
Trapp # 8	E.J.	9	1	0	0	90	4.3	3.7
Rip Van Winkle	FM	8	2	0	0	90	4.1	3.9
Vanguard	E.J.	8	2	0	1	89	4.3	3.8
Eskimo	Sto	9	0	1	1	89	4.3	3.7
Superior	A&C	9	1	0	1	89	4.0	3.4
Bullet	FM	8	2	0	1	89	4.5	3.8
Norstar	Tak	8	0	2	1	89	3.9	3.3
Sweet Sandwich	Sto	8	3	1	0	88	4.0	3.7
Columbia	FM	9	1	0	2	88	4.4	3.7
Tarmagon	Sto	8	0	3	1	88	4.5	3.7
XPH 3282	Asg	9	3	0	0	88	4.1	3.7
Sassy Brassy	FM	10	2	0	1	87	4.2	3.6
Sleeping Beauty	FM	9	4	0	0	87	4.2	3.8
Russet	Sto	10	2	2	8	78	3.8	3.0
Average		8	1	1	1	89	4.2	3.7

* 5 = Most Desirable

Listed in order of % Marketable

On August 20, 1987, Royal MH 60 SG was applied at 5 kg/ha in 550 L water/ha. The bulbs were pulled on September 10 and the tops were removed September 29. The samples were placed in a forced air and temperature controlled storage at 27°C and a relative humidity of 45% which increased to 60% in 3 weeks. The temperature was gradually lowered until it reached 1°C by the end of December. The samples were moved to a refrigerated storage in April of 1988. Evaluation took place August 8, 1988. Total storage period was 45 weeks.

LONG TERM AVERAGES ONION CULTIVAR STORAGE TRIALS

Cultivar	Source	# Years Tested	% Weight Loss in Storage	% Rot, Soft & Sprouts by Weight	% Marketable by Weight	* Firmness
Copra	BEJO	3	7.7	3.3	89.0	4.20
Bullet	FM	2	8.5	4.5	87.0	3.75
Simcoe	Sun	4	7.8	7.2	85.0	4.18
ABCO	A&C	3	8.0	7.7	84.3	3.67
Cuprum	Sun	4	10.3	5.7	84.0	3.70
Canada Maple	Sto	8	8.2	8.5	83.3	4.22
Buccaneer Imp.	HM	5	9.0	8.0	83.0	4.22
Taurus	Asg	8	6.9	10.3	82.8	3.69
Sweet Sandwich	Asg	4	9.5	8.3	82.2	3.48
Exporter	Sto	3	8.7	9.2	82.1	3.63
Tarmagon	Sto	2	8.5	9.5	82.0	3.85
Trapp # 8	E.J.	8	8.6	10.1	81.3	3.96
Capable	Sun	2	9.0	10.0	81.0	3.75
Sentinel	HM	8	9.9	9.8	80.3	4.17
Mucker	Sun	6	8.3	11.5	80.2	3.82
Columbia	FM	2	13.0	9.5	77.5	3.60
Autumn Pride	E.J.	3	8.0	14.7	77.3	3.33
Trapp # 6	E.J.	5	8.6	14.3	77.1	4.02
Autumn Keeper	Cro	5	9.6	15.4	75.0	3.92
Rocket	Asg	5	8.0	17.5	74.5	3.96
Tamarack	Sto	4	9.0	16.7	74.3	3.83
Mustang	HM	4	8.8	17.4	73.8	3.95
Superior	A&C	2	10.5	16.0	73.5	3.30
Autumn Splendor	Cro	7	8.7	19.1	72.2	3.90
Eskimo	Tak	4	9.0	19.0	72.0	3.55
Aries	Asg	6	8.2	20.5	71.3	3.52
Garnet	Asg	5	8.0	21.4	70.6	3.34
Ontario M	Asg	5	7.8	21.9	70.3	3.70
Early Pak	Cro	5	9.6	24.2	66.2	3.72
Autumn Glo	Cro	4	10.9	24.8	64.3	3.80
Russet	Sto	6	9.5	27.0	63.5	3.00
Norstar	Tak	4	8.8	30.0	61.2	2.95
Progress	HM	7	8.5	30.7	60.8	2.89

* 5 = Most Desirable

Listed in order of % Marketable

Storage period usually 11 months

LONG TERM AVERAGES OF ONION CULTIVARS

Cultivar	Source	# Years Tested	t/ha	b/a	Days to Maturity	Firmness
Eskimo	Tak	6	58.9	1048	105	3.75
Norstar	Tak	6	64.7	1151	106	3.31
Super Spice	Sto	5	37.5	668	107	4.14
Pronto S	Asg	4	48.4	862	107	3.00
Autumn Spice	Cro	9	41.2	773	108	4.17
Columbia	FM	5	58.6	1043	108	3.83
Simcoe	Sun	8	48.6	865	109	4.24
Rocket	Asg	13	54.6	970	109	3.82
Early Pak	Cro	8	52.5	935	110	4.08
Trapp # 6	E.J.	12	54.1	962	110	4.01
Tarmagon	Sto	5	67.2	1197	110	3.84
Garnet	Asg	12	54.1	962	110	3.77
Progress	HM	8	57.5	1024	110	3.70
Mirage	Sto	4	44.2	787	111	4.35
Tamarack	Sto	6	48.8	868	111	4.22
Aries	Asg	10	52.3	931	111	3.93
Taurus	Asg	12	54.0	960	111	3.79
Nutmeg	HM	10	51.6	919	112	4.29
Trapp # 8	E.J.	12	57.7	1026	112	4.19
Imp. Autumn Spice	Sto	8	45.8	815	112	3.78
Capable	Sun	5	59.2	1054	112	3.74
Sunburst	Asg	8	44.5	792	113	4.00
Buccaneer Imp.	HM	4	57.6	1025	114	4.28
Mucker	Sun	8	55.6	990	114	4.05

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LONG TERM AVERAGES OF ONION CULTIVARS - continued

Cultivar	Source	# Years Tested	t/ha	b/a	Days to Maturity	Firmness
ABCO	A&C	4	61.2	1090	114	4.02
Autumn Glo	Cro	6	53.7	955	114	3.97
Autumn Splendor	JHK	6	55.4	986	114	3.96
Bingo	Sto	2	65.8	1169	114	3.95
HXP 2612	HM	3	56.8	1010	114	3.90
Sunglow	Cro	4	51.3	909	114	3.86
Autumn Bronze	FM	2	40.0	713	115	4.00
Bronze Reserve	FM	4	48.5	863	115	3.78
Paragon	Sun	2	69.6	1236	116	4.10
Coppermine	FM	2	61.9	1100	116	3.78
Canada Maple	Sto	16	56.0	997	117	4.21
Spartan Era	Sun	7	55.5	987	117	4.13
Autumn Keeper	JHK	8	53.7	955	117	4.09
Storage King	Sto	8	53.9	960	117	3.90
Sweet Sandwich	PETO	7	69.0	1227	117	3.86
Gladiator	Sun	10	61.5	1094	117	3.76
Exporter	Sto	14	57.9	1030	117	3.76
Suntan	Swy	2	62.1	1101	117	3.70
Sassy Brassy	FM	2	65.4	1166	117	3.42
Bronze Age	FM	6	60.8	1082	117	3.38
Spartan Sleeper	PES	4	61.4	1093	118	4.11
Russet	Sto	7	67.7	1204	118	3.74
Bullet	FM	4	71.3	1268	119	3.89
Autumn Pride	Cro	5	69.0	1228	119	3.66

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LONG TERM AVERAGES OF ONION CULTIVARS - continued

Cultivar	Source	# Years Tested	t/ha	b/a	Days to Maturity	Firmness
Sentinel	HM	12	58.4	1039	120	4.22
HXP 2621	HM	3	48.2	859	120	3.93
Cuprum	Sun	5	64.2	1143	120	3.92
Harvestmore	HM	2	39.4	701	120	3.50
Flame	Asg	2	71.0	1263	120	3.42
Northern Oak	Sto	8	61.0	1085	121	3.80
Gibraltar	FM	2	59.7	1063	122	4.25
Copra	BEJO	5	64.9	1156	122	4.04
Surecrop	HM	4	60.7	1081	124	4.23
Better Banner	A&C	2	59.2	1052	125	3.84
Spartan Banner 80	Agw	2	67.8	1207	125	3.78
Superior	A&C	3	60.6	1072	125	3.56
Super Sleeper	HM	3	59.6	1060	126	4.20
Spartan Banner	A&C	6	62.1	1106	126	3.77

5 = Most Desirable

Listed in Order of Days to Maturity

ONTARIO REGIONAL POTATO CULTIVAR TRIAL - 1988

This trial was done in co-operation with Dr. R.H. Coffin (Research Scientist) and Mary Kay Kennan (Plant Breeding Technician) of Agriculture Canada.

MANAGEMENT PROCEDURES

Fertilizer: 330 kg/ha 15-6-15 + 10 kg/ha Borax.

Planted: Four replications of 15 cultivars were planted on May 24. The tubers were planted 25 cm apart at a depth of 7 cm and covered with low hilling. Large tubers were cut in half. The rows were spaced 86 cm apart.

Irrigation: July 15 to Aug. 16 irrigated 5 times at 2 cm each.

Water Table: Controlled at 60 cm.

Weed Control: One treatment of 2 kg/ha Lorox was applied June 4, after a second hilling.

Top Killed: September 22 with 4.5 L/ha Reglone.

Harvest: Harvest was done on October 11.

EVALUATION

Evaluation took place on November 21 and 25.

Marketable Size: 57 mm to 89 mm (2 1/4" to 3 1/2").

ONTARIO REGIONAL POTATO CULTIVAR TRIAL - 1988

Cultivar	Marketable		%	% Small	% Over & Culls	Vigour * June 15	Comments
	t/ha	bu/a					
Kennebec	55.9	905	75	6	19	4.3	Lots of cracks, brittle
Atlantic	51.9	840	84	13	3	2.0	Nice looking, round, shal. eyes
Saginaw Gold	48.3	782	80	14	6	4.0	
Rose Gold	46.7	756	78	15	7	4.0	Rough
Yukon Gold	46.6	755	80	11	9	1.3	
Superior	41.8	677	79	18	3	2.8	
Norchip	41.7	675	79	19	2	1.8	
G654-2	35.7	579	73	24	3	2.0	Good Looking
Yankee Chipper	35.6	576	68	28	4	3.3	Rot
Shepody	32.4	524	62	16	22	2.8	
F70021	30.8	499	78	15	7	4.0	Clean
9094-2	30.7	497	61	6	33	2.0	Large, rough
Red Gold	26.4	427	66	33	1	3.3	
G742-4Y	18.1	293	54	46	0	3.3	Short dormancy, smalls
Brador (F73008)		Unmarketable				1.0	Extensive rot, burst ends, splits

* Vigour and uniformity of emergence

1 bushel = 25 kg (55 lbs)

RADICCHIO CULTIVAR TRIAL - 1988

MANAGEMENT PROCEDURES

Fertilizer: 400 kg/ha 20-10-5 + 10 kg/ha Borax

Seeded: Seeding was done on May 11, June 10, and July 8 at 40 seeds/m. Two replications per seeding. The cultivars were thinned to a spacing of 43cm X 35cm, except Verona was thinned to 43cm X 17cm.

EVALUATION

Evaluation took place on July 21, August 28 and September 29, respectively.

Weight/dozen (kg): The average weight per head(g) multiplied by 12. 5.9 kg = 13 lbs.

% Heading In: The percentage of plants which showed the tendency to form a head at harvest. Not all were marketable.

Colour: The desired colour of the head was burgundy red leaves with white veins, outer wrapper leaves might be partially green. This mark was an average of all three seedings.

Uniformity: These marks are averages of all three seedings.

NOTE: The uniformity of maturity leaves much to be desired. Further breeding is required to correct all uniformity aspects of this crop.

RADICCHIO CULTIVAR TRIAL - 1988

Cultivar	Source	# of Marketable dozen/ha		Weight/Dozen (kg)	% Marketable		% Heading In			% Seeders			Uniformity		
		2nd Seeding	3rd Seeding		2nd Seeding	3rd Seeding	1st Seeding	2nd Seeding	3rd Seeding	1st Seeding	2nd Seeding	3rd Seeding	CoTour	CoTour	Size and Shape
Marsica	NK	997	3655	7.1	19	66	23	30	87	8	27	6	3.0	3.0	3.4
Medusa	BEJO	3322	3987	5.9	64	72	50	82	93	20	9	2	3.2	3.9	3.7
Elios	BEJO	886	4098	6.0	17	74	5	54	98	30	5	0	3.1	3.9	3.7
Augusto	BEJO	1440	4319	5.4	28	78	20	61	86	20	4	4	3.4	3.7	3.5
Adria	Agw	1550	3544	5.6	30	64	50	59	95	13	9	2	2.7	3.3	2.6
Mesola	NK	2104	3544	5.9	40	64	40	52	80	13	7	2	3.1	3.1	3.0
Rossana	NK	2547	3987	5.1	49	72	48	79	93	3	2	0	3.6	3.5	4.0
Cesare	BEJO	1108	4541	4.3	21	82	45	41	90	5	0	0	3.3	3.6	3.5
Livrette	RS	1993	3322	5.3	38	60	50	62	82	8	11	0	3.1	2.8	3.3
Otello	BEJO	222	2879	5.7	4	52	5	29	78	3	18	4	3.0	3.0	3.0
Adria	A&C	1772	3544	5.1	34	64	63	84	81	3	9	2	3.4	3.5	3.7
Adria	Sto	1329	3433	5.0	26	62	53	49	83	13	14	4	3.3	3.1	3.6
Giulio	HM	1108	3655	4.3	21	66	40	59	88	10	25	2	3.6	4.0	3.8
Silla	BEJO	3544	3987	4.1	68	72	68	86	93	8	6	0	3.5	3.3	4.0
Cesare	HM	2326	3322	4.2	45	60	68	84	85	3	5	0	3.4	3.6	3.5
Ronette	Sto	1772	3433	4.0	34	62	30	74	84	0	8	0	3.6	3.3	3.6
Giulio	BEJO	2104	2547	4.5	40	46	18	68	78	5	7	2	3.5	3.0	3.2
Gloria	NK	0	554	6.6	0	10	3	20	16	25	35	12	1.5	3.6	2.0
Chirosa	BEJO	0	0	-	0	0	5	25	20	48	36	14	1.8	3.8	3.2
Jessica	NK	0	0	-	0	0	3	9	12	43	25	6	1.7	3.5	2.6
Verona	HM	0	0	-	0	0	0	0	0	38	49	10	1.5	4.0	3.5

5 = Most Desirable

Listed in order of weight/ha of 3rd seeding (not shown)

RADISH CULTIVAR MAIN TRIAL - 1988

Cultivar	Source	Days to Harvest	Harvestable Days	Stand/Meter	Marketable t/ha		Weight/Root (g)	Top		Root				
					A	B		Strength	Length	Shape		Colour	Flesh Quality	Flavour
										Uniformity	Globe			
Rave Brand 2300	A&C	28	3+	29	9.1	6.6	14	4.0	L	3.0	2.3	3.3	4.3	2.8
Early Scarlet Gl.	A.Ch.	28	7	34	11.7	3.5	14	2.8	M	3.0	2.8	3.3	3.0	3.8
Snow Belle	A.Ch.	35	4	33	8.3	10.0	19	3.0	L	3.3	2.3	W	4.3	3.7
Poker	BEJO	28	6	32	12.9	1.3	11	2.3	S	3.7	3.3	4.3	3.3	4.0
Revisa	BEJO	28	7	35	13.1	2.0	11	2.0	VS	4.5	4.3	3.8	3.8	4.0
Red Devil B	FM	35	4	23	6.0	5.2	17	3.7	MS	2.3	2.3	2.7	3.0	3.7
Belle Glade	HM	28	7+	31	11.6	6.4	15	5.0	ML	4.0	4.3	4.0	4.0	3.7
Fancy Red	HM	28	7	27	11.8	3.5	14	3.0	M	3.8	3.3	2.8	2.5	3.8
Fancy Red Short T	HM	28	7+	32	8.7	7.6	15	3.8	L	3.3	3.8	3.3	3.5	3.8
Red King	HM	32	4+	33	11.0	5.7	15	3.0	M	3.3	2.0	3.3	4.5	4.0
Marabelle	NZ	29	5	34	11.8	2.3	13	2.3	S	4.0	3.5	4.3	2.5	3.8
Ribella	NZ	28	4	33	11.6	-	10	3.5	M	3.0	1.0	3.5	3.5	3.5
Saxafire	NZ	28	7	31	12.2	1.0	11	2.3	S	3.8	3.3	4.0	3.8	3.8
Fuego	NK	28	7	31	15.8	2.3	14	3.8	M	3.8	3.3	3.5	3.8	3.8
Red Baron	NK	28	6	27	7.8	1.2	12	4.0	ML	4.0	4.0	3.3	4.0	4.0
Red Pak	NK	28	5	32	13.2	2.4	13	3.3	ML	2.7	3.7	3.7	3.0	4.0
Comet	PETO	28	7	29	11.0	6.1	16	3.8	L	2.8	2.3	4.0	3.8	2.8
Red Cherriette	Sak	28	7+	30	11.8	6.0	16	2.5	M	3.8	4.0	3.3	4.3	4.0
Red Crunchy	Sak	28	7+	31	10.2	7.8	17	3.0	MS	3.5	3.5	3.5	4.3	3.8
Champion	Sto	28	7	34	14.9	6.5	17	4.0	M	3.0	2.0	3.8	4.3	3.5

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RADISH CULTIVAR MAIN TRIAL - 1988- continued

Cultivar	Source	Days to Harvest	Harvestable Days	Stand/Meter	Marketable t/ha		Weight/Root (g)	Top		Root				
					A	B		Strength	Length	Shape		Colour	Flesh Quality	Flavour
										Uniformity	Globe			
Cherry Belle	Sto	28	7	37	16.9	5.9	16	3.3	M	3.3	2.8	3.3	4.0	3.5
Galahad	Sto	28	5	38	16.4	-	11	3.5	M	4.0	3.5	4.0	3.5	4.0
Red Boy	Sto	28	5	27	10.8	5.9	15	3.7	M	3.0	3.3	3.0	2.7	3.7
Scarlet Gl. Spec.	Sto	28	2	33	17.0	6.6	16	4.3	L	3.3	3.3	3.3	3.3	3.3
Dandy	Sun	28	5	39	12.6	4.8	12	3.5	L	2.8	3.5	3.0	2.8	3.3
Earl Scrl. Gl. Med. T	Sun	31	4+	35	12.8	5.1	14	3.8	L	2.8	1.5	3.3	3.0	3.0

Seeded May 30, 1988 in rows spaced 20 cm apart at 36 seeds/metre.

Replicated twice; 2 harvest dates/replication.

5 = Most Desirable

Legend: Harvestable Days: Number of days the radish keeps its flesh quality and flavour

t/ha A: size 20 mm to 32 mm (3/4" to 1 1/4")

t/ha B: size > 32 mm (1 1/4"), large oversize of good quality

Top Length: VS - Very Short, S = Short, M. = Medium, L = Long, VL = Very Long

Root Colour: W = White

RADISH CULTIVAR ADAPTATION TRIAL - 1988

Cultivar	Source	Days to Harvest	Harvestable Days	Stand/Meter	Marketable t/ha		Weight/Root (g)	Top		Root				
					A	B		Strength	Length	Shape		Colour	Flesh Quality	Flavour
										Uniformity	Globe			
ACX 13	A&C	28	7+	23	4.4	26.4	33	3.5	L	3.5	4.0	4.0	3.5	4.0
Easter Egg	A.Ch.	28	6	38	13.4	22.5	25	3.5	VL	1.0	1.0	X	3.6	3.2
Plum Purple	A.Ch.	31	6	26	5.0	11.6	16	4.0	L	2.5	2.5	P	4.0	4.0
BB Champ	Bak	28	7+	28	10.9	3.5	15	3.5	M	2.5	2.0	4.5	4.0	4.0
Cherry BB	Bak	31	4+	39	18.8	4.4	16	3.0	M	3.0	1.5	3.5	3.5	3.0
Noba	Bak	31	3+	38	16.4	1.4	11	2.0	S	4.0	4.5	5.0	2.5	4.0
Raba	Bak	31	3+	31	12.9	2.7	12	2.5	MS	3.5	3.0	4.5	1.5	4.0
Tamina	NUN	28	5	28	10.1	11.1	19	2.0	M	2.5	3.0	3.0	2.5	3.0
Cherry Queen	TwI	28	7	24	6.1	23.9	29	5.0	VL	2.5	2.0	3.5	4.0	3.5

Seeded May 30, 1988 in rows spaced 20 cm apart at 36 seeds/metre.

No replication

5 = Most Desirable

Legend: Harvestable Days: Number of days the radish keeps its flesh quality and flavour

t/ha A: size 20 mm to 32 mm (3/4" to 1 1/4")

t/ha B: size > 32 mm (1 1/4"), large oversize of good quality

Top Length: VS = Very Short, S = Short, M = Medium, L = Long, VL = Very Long

Root Colour: X = Mixed, P = Purple